

Data used in the Development of the AQoL-8D (PsyQoL) Quality of Life Instrument

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ABSTRACT

This paper presents the initial results from the AQoL-8D (PsyQoL) project. It is a companion article to Richardson, Khan et al. (2009) which outlines the theory, methods and subsequent work to be undertaken in the project. These are summarised briefly here and the paper then focuses upon quantitative results from the two main surveys. These were, first, the 'construction survey' which was used for the construction of the AQoL-8D descriptive system and, second, the 'scaling survey' which obtained the preference data from which the utility scoring algorithm is constructed. The paper presents the descriptive system and disaggregated preference results.

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Glossary of Terms

| | |
|---|--|
| A data | Within item responses on item best/worst scale |
| B data | Item worst on Dim best/worst scale (Item score) |
| C data | Dimension worst on AQoL-8D best/worst/worse than death scale (Dimension score) |
| ED data | TTO score for multi attribute (ie multi item) health state within (spanning) 1 dimension only |
| E data | TTO score for a multi attribute health state spanning several dimensions and items |
| Dimension weight | TTO score of the worst health state in a dimension |
| Instruments | A questionnaire consisting of questions relating to a topic (a person's health) with a system of assigning numerical scores |
| Item | A question with 4-6 possible answers (response categories) |
| Item response category | The choice of responses (1-6) to the question asked by an item |
| Item weight | The VAS (or TTO) score for the worst outcome from an item converted to a utility weight |
| Multi Attribute psychometric instrument | (psychometric instrument) An instrument where scores are assigned by adding up the rank order of the item responses |
| Multi Attribute Utility instrument (MAU) | An instrument with a set of utility weights or algorithm for assigning utilities to each possible health state |
| SEIFA | Socio Economic Index for Area - An index of the socio economic status of a respondent's postcode |
| TTO | Time Trade-Off. A commonly used methodology for obtaining the strength of a patient's preference for different health states. It is widely equated with the economist's concept of utility. |
| QoL | Quality of Life: An ambiguous term with multiple possible meanings (see website for a discussion). MAU instruments employ preference weights which may or may not correspond with a particular notion of 'quality' |
| VAS | Visual Analogue Scale (Rating Scale). A calibrated line with defined endpoints for determining preferences. Commonly used by psychologists but not commonly equated with utility by economist's. |
| Weight | The relative importance of an item or dimension as measured by the worst possible score for that item or dimension |
| Construction survey | The survey of patients and the public in which own health states were reported using the items in the survey |
| Weights survey | The survey of patients and the general public in which VAS and TTO data were collected for items, dimensions and MA health states (by interview) |
| WTD | Worse than death |

Data used in the development of the AQoL-8D quality of life instrument

1 Introduction

The rationale and methods used for the construction of the AQoL-8D MAU instrument are described in detail in Richardson, Khan et al. (2009). In broad terms the project consists of the following steps:

1. Determining the theory or concept of quality of life (QoL) to be measured;
2. Creating the 'descriptive system': the questions and response categories which, when completed, describe the person's QoL; and
3. Determining the model to be used to combine responses into a utility index and obtaining preference data which will allow the calibration of the model.

AQoL-8D follows the theory adopted in AQoL-4D, 6D and 7D and measures QoL, as far as possible, in terms of handicap: the impact of a person's health state upon them in a social context, ie the effect upon their social relationships, activities of daily living, etc. While important, this determinant of utility is incomplete and the AQoL instruments supplement the description, as needed, with elements of physical and psychological impairment and disability.

Constructing the descriptive system involves the following additional steps:

1. Determining the dimensions of health to be included (social relationships, pain, happiness, etc);
2. Collecting a databank: a large number of items and item responses which capture the elements of each dimension; and
3. Analysis of the databank to determine the combination of questions which group together and most efficiently capture the required concepts which are themselves precisely defined by this analysis.

In Section 2 of the paper the database is described and the results of its analysis are presented. Details of the analysis are given in Hawthorne et al. (forthcoming).

The modelling of utility also follows the methods pioneered in AQoL-4D, 6D and 7D. AQoL-4D employed the multiplicative model which evolved in Decision Analytic Theory. This essentially involves a form of averaging of importance-weighted responses where importance was measured using the Time Trade-off (TTO) scaling technique. The model was employed for each of the AQoL-4D's dimensions separately and then, again, to combine the dimension results into an overall utility score.

AQoL-6D extended this procedure by introducing a second stage. In this, the final multiplicative model (which combined the 6 dimensions) was used to predict the utility of a number of multi attribute health states, ie health states defined by selected item responses. These were independently assessed using the TTO and an econometric model used to compare these with the predicted scores. That is, TTO utilities were made a function of the final multiplicative model scores and the dimension scores. This function was used to 'correct' the multiplicative model for errors introduced by double counting and interdependencies between elements of health, ie for structural and preference dependence.

In the present project AQoL-8D again extends the procedure. The same steps are followed as in AQoL-6D except that each of the dimension scores predicted by the dimension multiplicative model is 'corrected' in the same way as the AQoL-6D final score was corrected; that is, each dimension multiplicative model was used to predict multi attribute dimension scores (combinations of dimension items); these MA dimension health states are independently measured and econometrically compared with the multiplicative model scores. The resulting functions are used to predict dimension scores which, in turn, are combined (using two states) to obtain the final AQoL-8D utility score.

The preference data required for the modelling is as follows:

Dimensions

1. **Item response scores.** These are the relative importance weights for each response level of an item. They are measured on an item best-item worst, 0-1 scale. For logistical reasons VAS responses were collected and, as with AQoL-6D, transformed to TTO-equivalent utility scores.
2. **Item importance scores.** These are the relative importance weights of an item in a dimension. They are measured by comparing the item worst response (eg depressed all the time) but with other elements of mental health good, with the dimension worst responses.

The two sets of data above allow the construction of dimension (multiplicative average) scores.

3. **Dimension multi attribute (MA) scores.** These are the TTO scores of MA states within a dimension. Combinations of items are set at various levels (subject to the constraint that they are coherent – that they describe a credible health state).

AQoL-8D

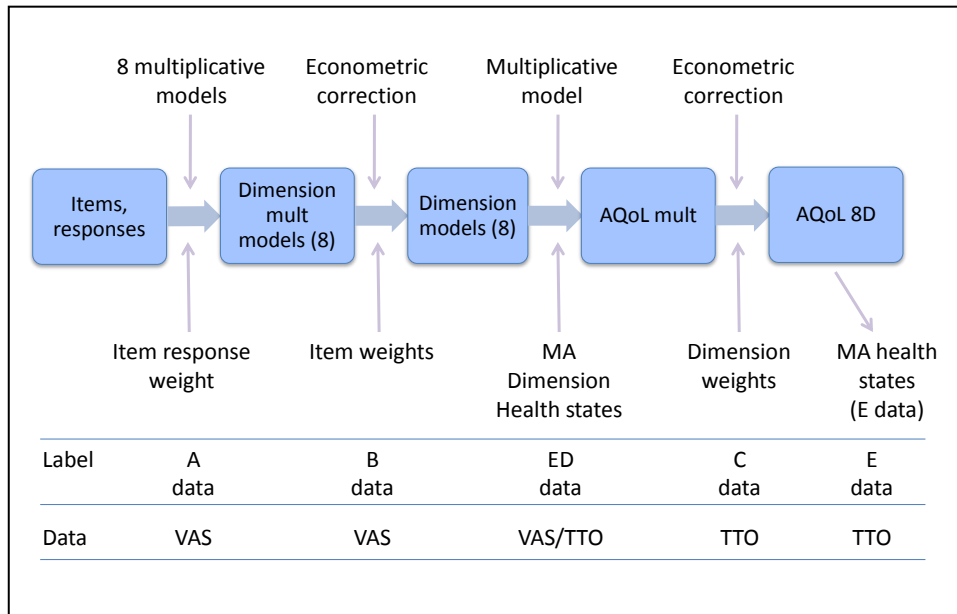
1. **Dimension importance scores.** These are the relative importance weights of each dimension. In principle they should be measured on an AQoL-8D Best-AQoL-8D Worst scale. To avoid cognitive overload by respondents they were measured on an AQoL-8D Best-Death scale and adjustment made for scores that were worse than death. (The procedure used is described in Richardson, Hawthorne et al. (1998)).
2. **AQoL-8D All Worst score.** This is the worst possible scenario described by the AQoL-8D measured on an AQoL Best- Death scale, as for the dimensions.

The above two sets of data allow the construction of the AQoL-8D multiplicative model into which dimension scores may be inserted.

3. **AQoL-8D MA scores.** These are the TTO scores of MA states spanning all dimensions of the AQoL-8D. They are used in the second stage modelling of AQoL-8D as described above.

The data collected is summarised in Box 1.

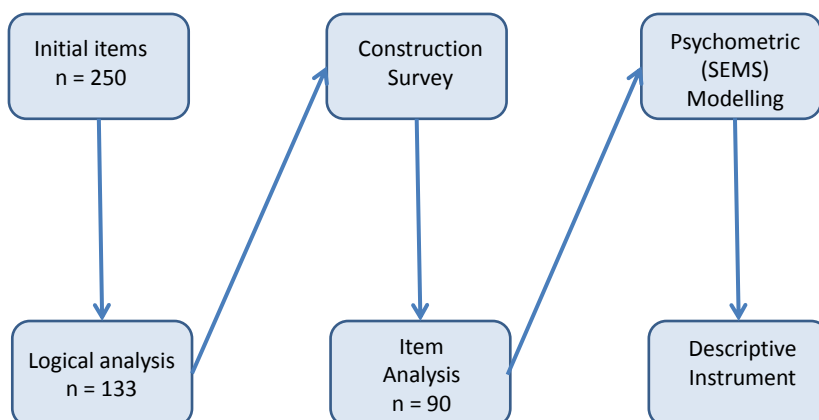
Box 1. Data Collected



2 Construction survey and descriptive system

Construction of the descriptive system is summarised in Figure 1. Upon receipt, questionnaires from both surveys were field edited and in cases of error or omission returned for completion. Double entry data was used together with a range of checks on all variables.

Figure 1. Construction of the descriptive system



The 'item bank' – a list of 250 items considered for inclusion in the first survey was constructed by combining the AQoL-4D and 6D item banks with items collected from the other sources summarised in Box 2. Logical and ad hoc analyses reduced these to the 133 items used in the construction questionnaire, which is reproduced in Appendix A. Analysis of item response properties led to a further reduction to 90 items which were included in a statistical analysis. This resulted in the selection of 15 items which reflected the hypothesised structure of the psychological dimensions of AQoL-8D.

Box 2. Instruments used in AQoL-8D item bank

| | |
|----|---|
| 1 | Items from AQoL-4D |
| 2 | Items from AQoL-6D |
| 3 | Lehman QoL Scale |
| 4 | Wisconsin QoL Client Questionnaire (Becker) |
| 5 | Lancashire QoL Profile |
| 6 | Oregon QoL Questionnaire (Bigelow) |
| 7 | Quality of Life Enjoyment and Satisfaction Questionnaire (Endicott) |
| 8 | McSad utility Measure for Depression Health States |
| 9 | Schizophrenia QoL Scale (SQLS) |
| 10 | Uniform Client Data Instrument (UCDI) (Mulkern) |
| 11 | QoL in Depression Scale (QLDS) |
| 12 | Quality of Life Index for Mental Health (Becker & Diamond) |

Results

The construction survey was administered by mail and by personal interview to 711 individuals, 514 patients (interviews) and 197 members of the public (mail) selected from postcodes which replicated the SEIFA profile of the Australian population. The larger number of patients were included in this survey as its primary purpose was to observe the relationship between item responses of individuals and, for the new module, it was necessary for individuals to have experienced the health states of interest.

Table 1 Table 1 indicates that the overall age distribution of the sample population was very satisfactory but, reflecting the difficulty in obtaining responses from the public, underrepresented young males. However this was offset by a disproportionate number of young males amongst the patient population. Similarly the distribution of results across SEIFA groups was relatively uniform except for the larger number in SEIFA group 5.

Table 1. Respondents to construction survey

| Age | Public | | | Patient | | | Grand Total |
|-------|--------|--------|-------|---------|--------|-------|-------------|
| | Male | Female | Total | Male | Female | Total | |
| 18-24 | 1 | 6 | 7 | 109 | 42 | 151 | 158 |
| 25-34 | 5 | 21 | 26 | 60 | 64 | 124 | 150 |
| 35-44 | 13 | 25 | 38 | 51 | 63 | 114 | 152 |
| 45-54 | 24 | 32 | 56 | 41 | 52 | 93 | 149 |
| 55-65 | 28 | 42 | 70 | 11 | 21 | 32 | 102 |
| | 71 | 126 | 197 | 272 | 242 | 514 | 711 |

| SEIFA | Male | Female | Total | Male | Female | Total | Grand Total |
|-------|------|--------|-------|------|--------|-------|-------------|
| 1 | 14 | 25 | 39 | 47 | 25 | 2 | 111 |
| 2 | 10 | 24 | 34 | 48 | 28 | 76 | 110 |
| 3 | 24 | 27 | 51 | 24 | 22 | 46 | 97 |
| 4 | 13 | 21 | 34 | 34 | 32 | 66 | 100 |
| 5 | 10 | 29 | 39 | 75 | 89 | 164 | 203 |
| | 71 | 126 | 197 | 228 | 196 | 424 | 621 |

SEIFA Missing = 90

Table 2 reports the frequency of responses in each response category for the items of AQoL-8D. An important characteristic of an instrument is that items differentiate between individuals; that is, responses will be distributed across the full range of response categories. Table 2 indicates that with respect to this criterion the selected items perform well. There are only two items where the top response category was selected by a single individual. The relatively small numbers in the top response category (generally less than 10 percent) indicate that the instrument is capable of identifying the small numbers with worst health. At the other end of the scale the instrument is less sensitive. Over half report no serious pain or problems with communication. Nevertheless, this is probably an accurate reflection of the respondents.

Data from the construction survey were analysed using exploratory and confirmatory factor analyses to obtain the item groupings for the new dimensions and sub-dimensions. Figure 2 depicts the summary results and fit statistics, which are excellent. These items were combined with AQoL-6D to form the AQoL-8D.

Table 3 shows the mean response category for each of the items for patients and for the public. Response level was given a numerical value 1, level 2a value 2 etc and values averaged. The most important result revealed is that for every item there was a significant difference between patient and public responses. This did not simply apply to the items and dimensions which specifically related to psychological wellbeing but to all dimensions. Patients reported higher levels of pain, poorer relationships, a lower capacity for independent living in addition to the lower scores expected for life satisfaction, self worth and mental health. Patients perceived their sense – vision, hearing and ability to communicate – as being poorer than members of the general public.

Table 2. Frequency of item response levels (Construction Data)

| Dimension | Items | | Item response category | | | | | | Total Sample |
|-------------------|-------|---------------------------|------------------------|-----|-----|-----|-----|----|--------------|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | |
| Indep living | 1 | household help | 257 | 231 | 130 | 82 | 11 | 16 | 711 |
| | 2 | get around outside | 235 | 210 | 111 | 77 | 62 | | 711 |
| | 3 | walking | 232 | 238 | 159 | 69 | 11 | | 709 |
| | 4 | personal care | 351 | 177 | 152 | 29 | 3 | | 712 |
| Life satisfaction | 5 | content | 91 | 223 | 178 | 118 | 102 | | 712 |
| | 6 | enthusiastic | 61 | 195 | 221 | 167 | 68 | | 712 |
| | 7 | happy | 37 | 278 | 265 | 111 | 20 | | 711 |
| | 8 | pleasure | 44 | 218 | 292 | 129 | 27 | | 710 |
| Mental health | 9 | depressed | 82 | 134 | 240 | 108 | 96 | 49 | 709 |
| | 10 | sleeping | 90 | 140 | 203 | 176 | 103 | | 712 |
| | 11 | angry | 96 | 221 | 280 | 105 | 9 | | 711 |
| | 12 | hurting yourself | 379 | 109 | 134 | 59 | 31 | | 712 |
| | 13 | despair | 233 | 168 | 115 | 151 | 45 | | 712 |
| | 14 | worried | 101 | 192 | 182 | 176 | 61 | | 712 |
| | 15 | sad | 32 | 188 | 289 | 125 | 78 | | 712 |
| | 16 | calm/tranquil or agitated | 46 | 240 | 285 | 119 | 19 | | 709 |
| Coping | 17 | energy | 43 | 211 | 176 | 203 | 77 | | 710 |
| | 18 | control | 86 | 275 | 153 | 140 | 56 | | 710 |
| | 19 | cope | 74 | 300 | 167 | 132 | 37 | | 710 |
| Relationships | 20 | enjoy close relationships | 155 | 329 | 147 | 72 | 6 | | 709 |
| | 21 | close relationships | 157 | 315 | 135 | 68 | 25 | | 700 |
| | 22 | socially isolated | 132 | 143 | 220 | 150 | 63 | | 708 |
| | 23 | socially excluded | 109 | 167 | 229 | 153 | 53 | | 711 |
| | 24 | close/intimate | 133 | 293 | 143 | 85 | 52 | | 706 |
| | 25 | family role | 284 | 223 | 161 | 36 | 1 | | 705 |
| | 26 | community role | 302 | 174 | 129 | 101 | | | 706 |
| Self worth | 27 | burden | 237 | 184 | 101 | 136 | 53 | | 711 |
| | 28 | worthless | 160 | 154 | 220 | 117 | 61 | | 712 |
| | 29 | confidence | 62 | 214 | 199 | 165 | 68 | | 708 |
| Pain | 30 | serious pain | 366 | 136 | 122 | 87 | | | 711 |
| | 31 | pain | 261 | 356 | 78 | 12 | | | 707 |
| | 32 | pain interfere | 168 | 175 | 230 | 114 | 23 | | 710 |
| Senses | 33 | vision | 144 | 266 | 266 | 35 | 1 | | 712 |
| | 34 | hearing | 245 | 268 | 169 | 25 | 4 | | 711 |
| | 35 | communicate | 456 | 175 | 72 | 8 | | | 711 |

Figure 2. Structure of the AQoL-8D

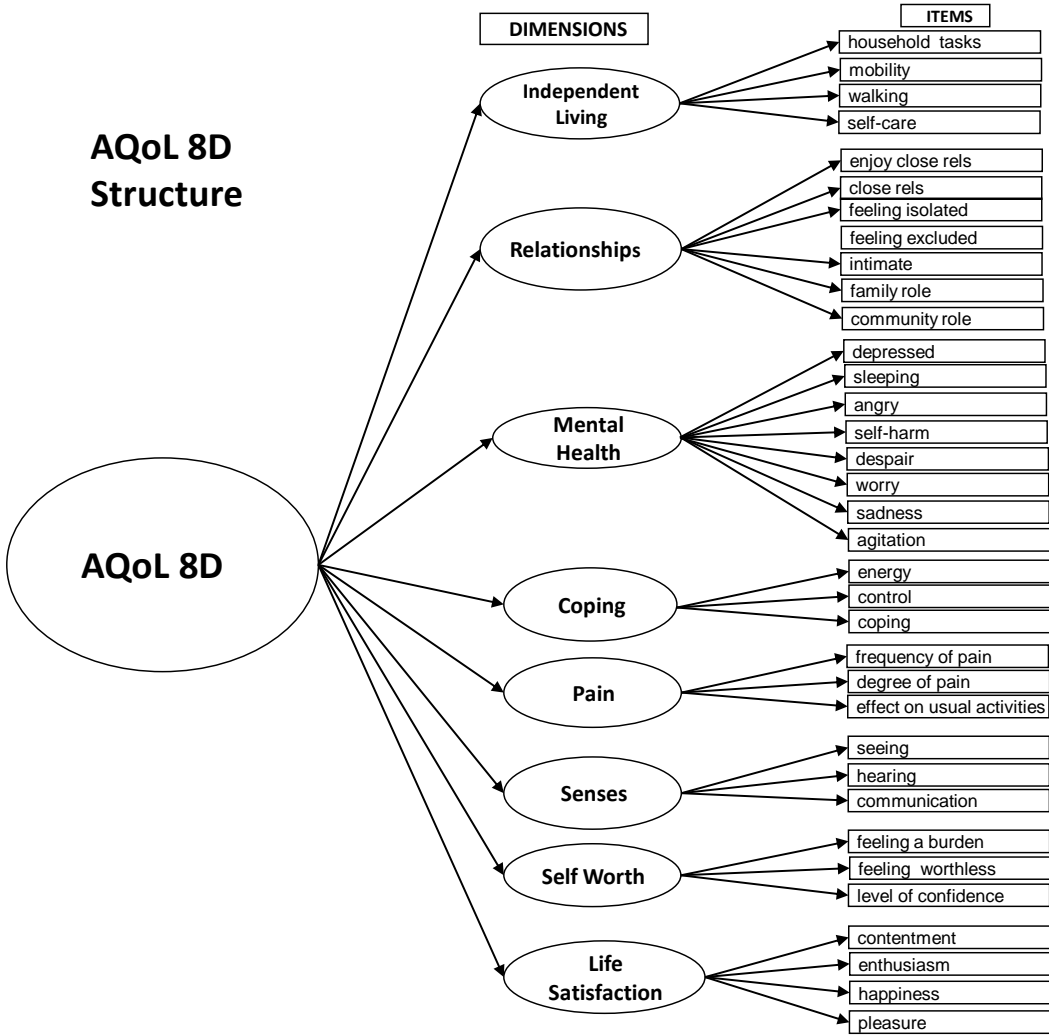


Table 3. Average response category*: self completed questionnaire (Weights Survey Data)

| Dimensions and Items | No. of Response Categories | Mean | | | SE | | | Sig. |
|------------------------------------|----------------------------|--------|---------|-------|--------|---------|-------|------|
| | | Public | Patient | Total | Public | Patient | Total | |
| Independent Living | | | | | | | | |
| Household help | 5 | 1.38 | 2.13 | 1.74 | .033 | .059 | .036 | .000 |
| Get around outside | 6 | 1.48 | 2.60 | 2.02 | .037 | .077 | .047 | .000 |
| How well you can you walk | 6 | 1.65 | 2.02 | 1.83 | .039 | .056 | .034 | .000 |
| Personal care | 5 | 1.19 | 1.84 | 1.51 | .025 | .049 | .030 | .000 |
| Life Satisfaction | | | | | | | | |
| How content are you with your life | 5 | 2.03 | 3.14 | 2.57 | .046 | .072 | .047 | .000 |
| Enthusiastic | 5 | 2.27 | 3.02 | 2.64 | .041 | .067 | .041 | .000 |
| Happy? | 5 | 2.15 | 2.81 | 2.47 | .029 | .053 | .032 | .000 |
| Pleasure? | 5 | 2.28 | 2.91 | 2.59 | .034 | .055 | .034 | .000 |
| Mental Health | | | | | | | | |
| Depressed? | 6 | 2.30 | 3.62 | 2.94 | .051 | .075 | .052 | .000 |
| Sleeping | 5 | 2.61 | 3.25 | 2.92 | .053 | .066 | .044 | .000 |
| Angry? | 5 | 2.64 | 2.95 | 2.79 | .034 | .053 | .032 | .000 |
| Hurting yourself? | 5 | 1.20 | 2.15 | 1.66 | .026 | .066 | .039 | .000 |
| Despair | 5 | 1.52 | 2.87 | 2.17 | .041 | .071 | .048 | .000 |
| Worried | 5 | 2.34 | 3.19 | 2.76 | .051 | .068 | .045 | .000 |
| Sad? | 5 | 2.43 | 3.22 | 2.82 | .036 | .056 | .036 | .000 |
| Calm/tranquil or agitated | 5 | 2.41 | 2.81 | 2.60 | .038 | .052 | .033 | .000 |
| Coping | | | | | | | | |
| Energy | 5 | 2.39 | 3.12 | 2.74 | .042 | .066 | .041 | .000 |
| Control | 5 | 1.98 | 2.89 | 2.42 | .039 | .064 | .041 | .000 |
| Cope | 5 | 1.89 | 2.71 | 2.29 | .036 | .061 | .038 | .000 |
| Relationships | | | | | | | | |
| Enjoy close relationships | 5 | 1.62 | 2.37 | 1.98 | .038 | .062 | .039 | .000 |
| Close relationships | 6 | 1.72 | 2.51 | 2.10 | .045 | .070 | .044 | .000 |
| Socially isolated? | 5 | 2.06 | 3.00 | 2.51 | .050 | .070 | .046 | .000 |
| Socially excluded | 5 | 2.27 | 3.07 | 2.66 | .046 | .063 | .042 | .000 |
| Close/intimate | 5 | 1.68 | 2.51 | 2.08 | .040 | .068 | .042 | .000 |
| Family role | 4 | 1.19 | 2.23 | 1.69 | .024 | .056 | .036 | .000 |
| Community role | 4 | 1.15 | 2.15 | 1.64 | .024 | .058 | .036 | .000 |
| Self Worth | | | | | | | | |
| Burden | 5 | 1.47 | 2.80 | 2.12 | .042 | .072 | .048 | .000 |
| Worthless? | 5 | 1.80 | 2.82 | 2.29 | .046 | .072 | .046 | .000 |
| Confidence | 5 | 2.28 | 3.02 | 2.64 | .041 | .066 | .041 | .000 |
| Pain | | | | | | | | |
| Serious Pain | 4 | 1.34 | 2.02 | 1.67 | .037 | .063 | .038 | .000 |
| Pain or discomfort | 4 | 1.53 | 1.92 | 1.72 | .030 | .044 | .028 | .000 |
| Pain interfere | 5 | 1.84 | 2.43 | 2.13 | .044 | .065 | .040 | .000 |
| Senses | | | | | | | | |
| Vision | 6 | 1.96 | 2.17 | 2.06 | .040 | .048 | .031 | .000 |
| Hearing | 6 | 1.74 | 2.11 | 1.92 | .040 | .058 | .035 | .000 |
| Communicate | 4 | 1.14 | 1.57 | 1.35 | .020 | .042 | .025 | .000 |

*Response categories are assigned values 1 ... 5. The mean is the average of the resulting numbers.

3 Results from the weights survey

3.1 Data for the multi attribute (MA) models

The application of the TTO and VAS techniques at the Monash Centre for Health Economics is described in detail in lezzi et al. (2009). In total 629 interviews were completed; 306 members of the public and 323 patients. Similar numbers of males and females were obtained and were distributed uniformly across the age categories included in the survey (Tables 4 and 5). Despite significant effort, recruitment of lower SEIFA groups proved difficult and the final sample was skewed heavily towards SEIFA groups 4 and 5. However ANOVA did not reveal differences between the combined responses of persons in SEIFA groups 1-3 compared with those in SEIFA groups 4 and 5 combined.

Table 4. Age and gender distribution (in the Weights Survey)

| Age Group | Public | | | Patient | | | Grand Total |
|----------------|--------|--------|-------|---------|--------|-------|-------------|
| | Male | Female | Total | Male | Female | Total | |
| 18 to 24 years | 22 | 31 | 53 | 22 | 23 | 45 | 98 |
| 25 to 34 years | 38 | 36 | 74 | 35 | 30 | 65 | 139 |
| 35 to 44 years | 32 | 35 | 67 | 35 | 43 | 78 | 145 |
| 45 to 54 years | 26 | 43 | 69 | 41 | 29 | 70 | 139 |
| 55 to 64 years | 30 | 42 | 72 | 44 | 15 | 59 | 131 |
| 65 years + | 7 | 5 | 12 | 3 | 3 | 6 | 18 |
| Total | 155 | 192 | 347 | 180 | 143 | 323 | 670 |

Table 5. SEIFA groups by location (in the Weights Survey)

| SEIFA Group | Respondent | | Total |
|--------------|------------|---------|-------|
| | Public | Patient | |
| 1 | 18 | 30 | 48 |
| 2 | 1 | 14 | 15 |
| 3 | 9 | 38 | 47 |
| 4 | 95 | 108 | 203 |
| 5 | 136 | 124 | 260 |
| Total | 259 | 314 | 573 |

Missing = 140

The sample size for TTO 'worse than death' (WTD) score for both public and patient was not large enough and hence omitted from the present analysis.

Items had between 4 and 6 response levels which were scored using a VAS on which highest and lowest response levels were the scale endpoints and were calibrated as 100 and 0.00 respectively. The (transformed) VAS was therefore used to assign scores to the 2-4 intermediate response categories between these endpoints.

The average VAS score for each response level for each item is reported in Appendix B. The criterion for a satisfactory outcome of the scaling exercise is that the scores should span the 0-1 interval more or less uniformly, ie without leaving large 'value gaps' between responses. Items generally performed very well with respect to this criterion. The second response level (first down from the top) received VAS ratings between 80 and 90 for 25 items and was below 85 for only 6. At the other end of the scale, 26 items had a second last response category between 15 and 25 with only 2 below this range.

Appendix B separates public and patient responses. By contrast with the results recorded in Table 3 – which related to the patient's own health state – the data reveal relatively little difference in the VAS scores for the valuation of the abstract, impersonal health state. There are no significant differences in the scores of 14 of the 35 items and for another 10 items only one response level differed significantly. Where differences occurred they were small and, contrary to the conventional wisdom that adaptation results in higher QoL assessments by those affected than by the general public, patient scores are always lower when differences are significant. These results are summarised in Table 6 which indicates that the differences occur in the dimensions of mental health, self worth and life satisfaction.

Table 7 reports item worst VAS scores. They were obtained by VAS ratings of the worst outcome of an item (with other dimension items at their best level) on a scale from dimension best = 100 (all items at their best level) to dimension worst = zero (all items at their worst level).

There are no significant differences in the rating of public and patient respondents in Table 7. This is to be expected as differences in values between the two groups would affect the item worst and dimension worst assessments equally.

Item worst scores are the basis for item weights in the multiplicative model which use the disutilities obtained from these scores to model dimension disutilities. Consequently the differences in the scores are one of the determinants of the difference between the present procedure and the use of an unweighted combination algorithm. As shown in Table 8 the weights within a dimension vary significantly but the amount of difference varies between dimensions with weights in the independent living dimension varying threefold but in the pain dimension by only 26 percent.

TTO scores for dimension worst health states were obtained by describing the worst health state in a dimension and evaluating it on a best health (all dimensions) = 1, death = 0 scale. Results recorded in Table 9 again indicate that when significant differences occur between the public and patient respondents it is the public which assigns higher scores. These dimension scores are the basis for dimension weights in the multiplicative model. Unlike the earlier results for items there is relatively little variation in their magnitude with the weight for independent living being only 31.5 percent greater than the weight for mental health which receives the lowest score (and hence the greatest disutility weight).

Item worst data in Table 7 allowed the construction of dimension multiplicative formulae which are used in conjunction with the item scores presented. Dimension worst scores in Table 9 permit the construction of the AQoL-8D multiplicative model which is used in conjunction with the dimension scores calculated by the (final) dimension formula.

Table 6. Significant difference in item response scores: A Data: Public vs patient

| Dimension | No. of levels with significant difference | N = number of levels (excluding 1.00; 0.00) | Diff = average difference (public - patient) when differences exist (100 point scale) |
|---------------------------|---|---|---|
| | (n) | N | Diff |
| Independent living | | | |
| Household help | 0 | 3 | - |
| Get around outside | 1 | 4 | 4.2 |
| Walking | 1 | 4 | -4.4 |
| Personal care | 1 | 3 | 4.5 |
| Life satisfaction | | | |
| Content | 3 | 3 | 4.3 |
| Enthusiastic | 1 | 3 | 4.2 |
| Happy | 1 | 3 | 3.5 |
| Pleasure | 1 | 3 | 3.0 |
| Mental health | | | |
| Depressed | 2 | 4 | 5.7 |
| Sleeping | 3 | 3 | 7.4 |
| Angry | 3 | 3 | 7.5 |
| Self harm | 2 | 3 | 6.3 |
| Despair | 0 | 3 | - |
| Worried | 2 | 3 | 5.8 |
| Sad | 3 | 3 | 5.2 |
| Calm/tranquil or agitated | 0 | 3 | - |
| Coping | | | |
| Energy | 0 | 3 | - |
| Control | 0 | 3 | - |
| Cope | 0 | 3 | - |
| Relationship | | | |
| Enjoy close relationships | 2 | 3 | 2.2 |
| Close relationships | 0 | 4 | - |
| Socially isolated | 2 | 3 | 6.4 |
| Socially excluded | 1 | 3 | 5.9 |
| Close/intimate | 0 | 3 | - |
| Family role | 0 | 2 | - |
| Community role | 1 | 2 | 6.0 |
| Self worth | | | |
| Burden | 0 | 3 | - |
| Worthless | 2 | 3 | 4.3 |
| Confidence | 3 | 3 | 3.9 |
| Pain | | | |
| Serious pain | 0 | 2 | - |
| Pain or discomfort | 1 | 2 | -6.6 |
| Pain interfere | 1 | 3 | 3.3 |
| Senses | | | |
| Vision | 0 | 4 | - |
| Hearing | 0 | 4 | - |
| Communicate | 1 | 2 | -5.8 |

Table 7. Item Worst scores: B Data (VAS) on Dimension Best/Worst Scale (0 - 100)

| Dimension and Items | Mean VAS Score | | | SE | | | Sig. |
|--|----------------|---------|-------|--------|---------|-------|------|
| | Public | Patient | Total | Public | Patient | Total | |
| Independent Living | | | | | | | |
| Cannot do any jobs around the house without help | 45.29 | 46.36 | 45.79 | 2.165 | 2.516 | 1.643 | .746 |
| Cannot get around outside the house without help | 41.47 | 38.81 | 40.24 | 1.895 | 2.262 | 1.460 | .366 |
| Bedridden | 12.52 | 14.75 | 13.56 | 1.328 | 1.768 | 1.087 | .308 |
| Cannot do personal care tasks without help | 17.64 | 20.85 | 19.13 | 1.424 | 1.946 | 1.184 | .178 |
| Life Satisfaction | | | | | | | |
| Not at all content with life | 32.28 | 36.63 | 34.30 | 2.170 | 2.624 | 1.686 | .199 |
| Not at all enthusiastic | 41.52 | 39.09 | 40.39 | 2.064 | 2.342 | 1.550 | .435 |
| Never happy | 23.35 | 23.67 | 23.50 | 1.773 | 2.004 | 1.327 | .905 |
| Never feel pleasure | 24.32 | 20.31 | 22.46 | 2.021 | 1.968 | 1.420 | .160 |
| Mental Health | | | | | | | |
| Feel depressed all the time | 24.53 | 27.49 | 26.04 | 1.880 | 2.362 | 1.515 | .329 |
| Always trouble sleeping | 37.79 | 36.74 | 37.26 | 2.232 | 2.367 | 1.626 | .748 |
| Feel angry all the time | 28.78 | 31.17 | 29.99 | 1.875 | 2.082 | 1.403 | .394 |
| Feel like hurting yourself all the time | 13.05 | 14.92 | 14.00 | 1.521 | 1.947 | 1.240 | .451 |
| Despair all the time | 23.44 | 28.59 | 26.06 | 1.746 | 2.252 | 1.436 | .073 |
| Worried all the time | 35.67 | 34.20 | 34.92 | 1.936 | 2.037 | 1.405 | .600 |
| Always agitated | 30.56 | 32.16 | 31.37 | 1.811 | 2.017 | 1.357 | .555 |
| Sad nearly all the time | 26.38 | 22.98 | 24.65 | 1.911 | 1.805 | 1.314 | .196 |
| Coping | | | | | | | |
| Always tired and lacking energy | 37.78 | 38.54 | 38.16 | 2.124 | 2.315 | 1.571 | .808 |
| Never in control of my life | 27.58 | 31.94 | 29.80 | 1.959 | 2.201 | 1.479 | .141 |
| Not at all able to cope with life's problems | 20.12 | 21.55 | 20.85 | 1.664 | 1.838 | 1.241 | .567 |
| Relationships | | | | | | | |
| Hate close relationships | 32.13 | 36.29 | 34.06 | 2.033 | 2.522 | 1.601 | .196 |
| Close relationships (family and friends) are very unpleasant | 29.29 | 33.68 | 31.33 | 1.654 | 2.104 | 1.324 | .098 |
| Always feel socially isolated | 31.20 | 31.90 | 31.52 | 1.970 | 2.178 | 1.459 | .812 |
| Always feel socially excluded | 26.58 | 25.51 | 26.08 | 1.888 | 2.136 | 1.414 | .706 |
| Very unhappy with close relationships | 31.48 | 39.73 | 35.31 | 1.889 | 2.463 | 1.545 | .008 |
| Cannot carry out any part of family role | 31.41 | 36.60 | 33.82 | 2.004 | 2.401 | 1.553 | .096 |
| Cannot carry out any part of community role | 38.37 | 30.06 | 34.51 | 2.045 | 2.131 | 1.495 | .005 |
| Self Worth | | | | | | | |
| A total burden to other people | 25.08 | 32.32 | 28.76 | 2.020 | 2.412 | 1.589 | .023 |
| Always feel worthless | 22.75 | 25.69 | 24.24 | 1.815 | 1.936 | 1.329 | .269 |
| No self-confidence | 30.53 | 26.53 | 28.50 | 1.938 | 1.879 | 1.352 | .140 |
| Pain | | | | | | | |
| Serious pain most of the time | 26.19 | 32.57 | 29.43 | 1.989 | 2.475 | 1.601 | .046 |
| Periods of unbearable pain | 29.33 | 33.10 | 31.24 | 2.046 | 2.135 | 1.482 | .204 |
| When pain occurs, it always interferes with usual activities | 34.77 | 26.70 | 30.67 | 1.956 | 2.056 | 1.437 | .005 |
| Senses | | | | | | | |
| Blind | 35.27 | 35.33 | 35.30 | 2.327 | 2.865 | 1.819 | .986 |
| Deaf | 40.05 | 33.82 | 37.16 | 2.243 | 2.630 | 1.721 | .071 |
| Cannot communicate adequately with others | 30.44 | 25.89 | 28.34 | 1.911 | 2.316 | 1.488 | .128 |

Table 8. Highest/lowest item worst scores by dimension

| Dimension | Highest / Lowest = Factor of variation within dimension |
|--------------------|---|
| Independent living | 46.6 / 14.8 = 3.15 |
| Life satisfaction | 39.1 / 20.3 = 1.93 |
| Mental health | 31.2 / 14.9 = 2.09 |
| Coping | 38.5 / 21.6 = 1.78 |
| Relationships | 39.7 / 25.5 = 1.56 |
| Self worth | 32.3 / 25.7 = 1.26 |
| Pain | 32.6 / 26.7 = 1.22 |
| Senses | 35.3 / 25.9 = 1.36 |

Table 9. Dimension worst score (VAS scores) Best/Death (100-0) scale: C Data

| Dimension Worst Health State | Mean | | | SE | | | Sig. |
|------------------------------|--------|---------|-------|--------|---------|-------|------|
| | Public | Patient | Total | Public | Patient | Total | |
| Independent Living | 38.56 | 32.02 | 35.53 | 1.993 | 2.498 | 1.585 | .040 |
| Life Satisfaction | 29.58 | 29.22 | 29.41 | 1.568 | 2.191 | 1.316 | .892 |
| Mental Health | 28.72 | 25.39 | 27.02 | 1.508 | 1.750 | 1.161 | .152 |
| Coping | 40.17 | 32.01 | 36.01 | 1.532 | 1.694 | 1.167 | .000 |
| Relationships | 27.81 | 30.50 | 29.05 | 1.569 | 2.188 | 1.317 | .309 |
| Self Worth | 33.60 | 33.42 | 33.51 | 1.664 | 1.937 | 1.279 | .946 |
| Pain | 27.69 | 28.68 | 28.19 | 1.546 | 2.094 | 1.308 | .707 |
| Senses | 31.95 | 31.41 | 31.70 | 2.057 | 2.809 | 1.703 | .875 |

Table 10. Dimension Worst TTO Scores Best-Death (10-0) Scale

| Dimension | Sample Size | | | Mean | | | SE | | | Sig |
|--------------------|-------------|---------|-------|--------|---------|-------|--------|---------|-------|------|
| | Public | Patient | Total | Public | Patient | Total | Public | Patient | Total | |
| Independent living | 150 | 141 | 191 | 5.8 | 4.74 | 5.30 | .23 | .24 | .17 | .001 |
| Life satisfaction | 152 | 152 | 304 | 6.48 | 5.20 | 5.84 | .20 | .23 | .16 | .000 |
| Mental health | 139 | 138 | 277 | 5.06 | 4.38 | 4.72 | .20 | .22 | .15 | .025 |
| Coping – TTO | 147 | 159 | 306 | 7.18 | 5.64 | 6.38 | .18 | .22 | .15 | .000 |
| Relationships | 152 | 144 | 296 | 5.77 | 4.57 | 5.18 | .21 | .22 | .16 | .000 |
| Self worth | 147 | 148 | 295 | 6.89 | 5.49 | 6.18 | .18 | .22 | .15 | .000 |
| Pain | 135 | 139 | 274 | 5.02 | 4.29 | 4.65 | .22 | .22 | .16 | .021 |
| Senses | 137 | 121 | 258 | 5.29 | 4.64 | 4.98 | .24 | .28 | .18 | .076 |

3.2 Data for the second stage adjustment

The remainder of the data described in this report are used in the second stage adjustment, firstly of the dimension models and secondly of the AQoL-8D model.

MA health states were created for each of the dimensions by setting the items of different dimensions at different levels. This task was undertaken logically, and not using experimental design, as the latter procedure produces combinations of item levels which are nonsensical. The criteria used to create dimension MA states were (i) that the MA health state should be coherent and imaginable; (ii) that they should include all combinations of items; and (iii) that the item levels should result in a range of scores which cover the entire utility scale from best to worst health. As the TTO evaluations were carried out on a best health = 1 to death = 0 scale, scores less than 0 were possible when a respondent deemed a health state worse than death.

Within dimension MA states were also evaluated using a VAS in order to economically increase the number of observations. A number of these states were also evaluated with a TTO.

Table 11 reports a comparison of patient and public TTO scores for these health states. Consistent with earlier observations patients, not the public, give lower valuations, and not simply for mental health but for all health states. Every dimension had at least one health state where the difference was statistically significant at the 5 percent level. However the lack of significance for other health states is largely attributable to small numbers and large standard errors in most cells (typically 10-15 observations but sometimes less). Mean patients were less than public values for 118 of the 144 health states where TTO comparisons were possible.

Table 11. Comparison of patient, public dimension MA health state TTO scores

| Dimensions | Patient > Public | | | Patient < Public | | Other | Total |
|--------------------|------------------|-------|-------|------------------|-------|-------|-------|
| | 5% | Other | Total | 5% | Total | | |
| Independent living | 4 | 5 | 9 | - | 2 | 7 | 18 |
| Life satisfaction | 2 | 13 | 16 | - | 2 | 6 | 24 |
| Mental health | 1 | 13 | 14 | - | 4 | 6 | 24 |
| Coping | 2 | 12 | 14 | - | 10 | 6 | 30 |
| Relationships | 2 | 16 | 18 | - | - | - | 18 |
| Self worth | 2 | 13 | 15 | - | 4 | 5 | 24 |
| Pain | 5 | 13 | 18 | - | - | - | 18 |
| Senses | 3 | 11 | 14 | - | 4 | - | 18 |
| Total | | | 118 | - | 26 | 30 | 174 |

The dimension MA definitions (item combinations) are reported in Appendix C and Figures 3-10 give the frequency distribution of the resulting scores. Worse than death (WTD) health states have not been rescaled in these figures and there is a discontinuity in the interpretation of data at 0.00. Positive values on the horizontal axis show the number of years a respondent considers equal to 10 years in the MA health state being assessed. Negative scores are to be interpreted differently. They are the number of years of full health, x , which, in combination with the remainder of the 10 year period ($10-x$) a person considers to be equivalent to death. For example, a value of -1.0 indicates that the respondent considers death to be equivalent to 9 years in the health state described followed by one year of good health.

Figure 3. ED Data: Independent Living: Frequency distribution of TTO scores (N = 205)

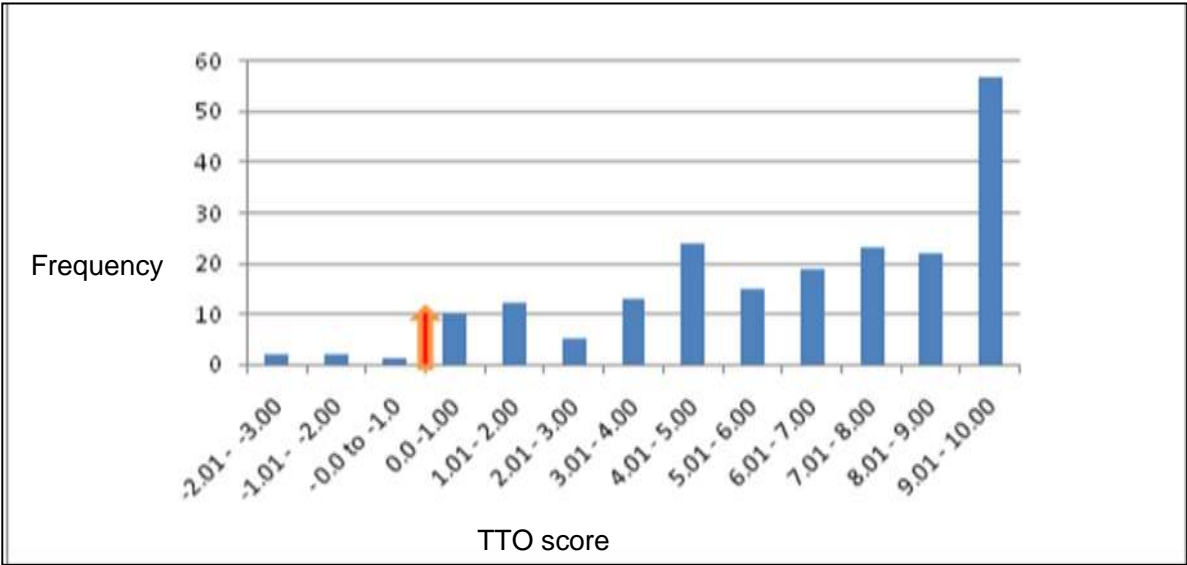


Figure 4 ED Data: Life Satisfaction: Frequency of TTO Scores (N = 449)

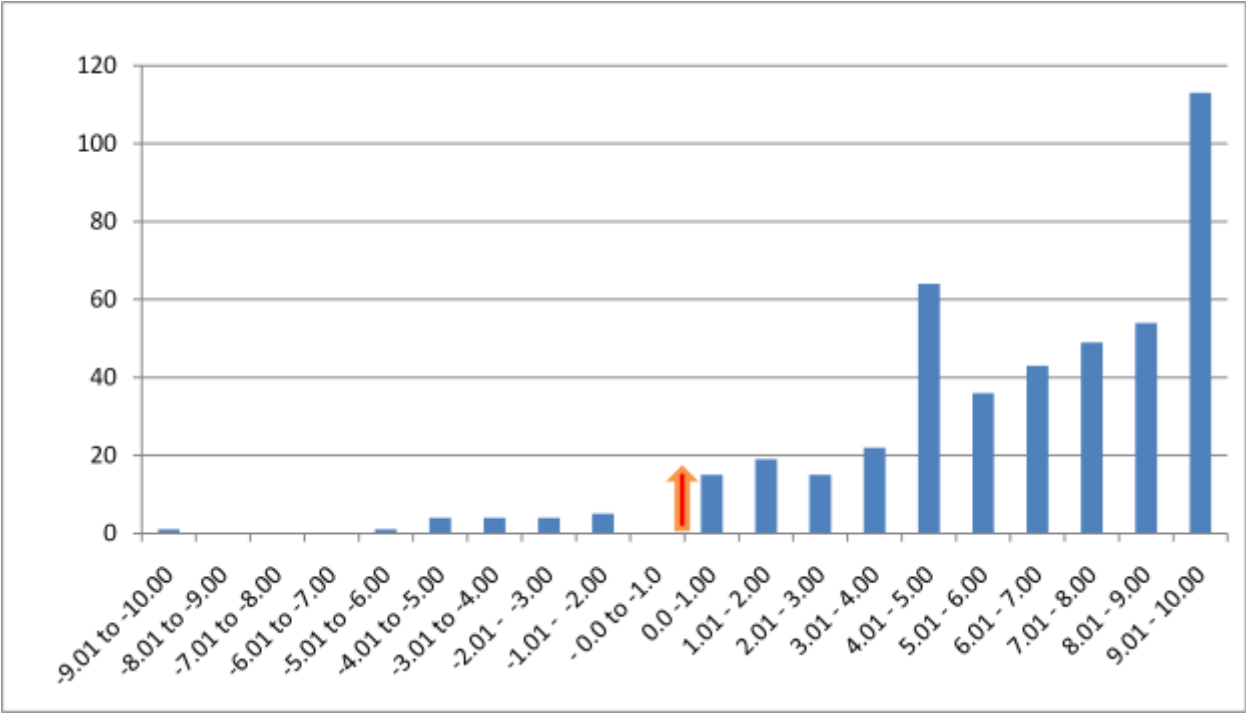


Figure 5. ED Data: Mental Health: Frequency of TTO Scores (N = 500)

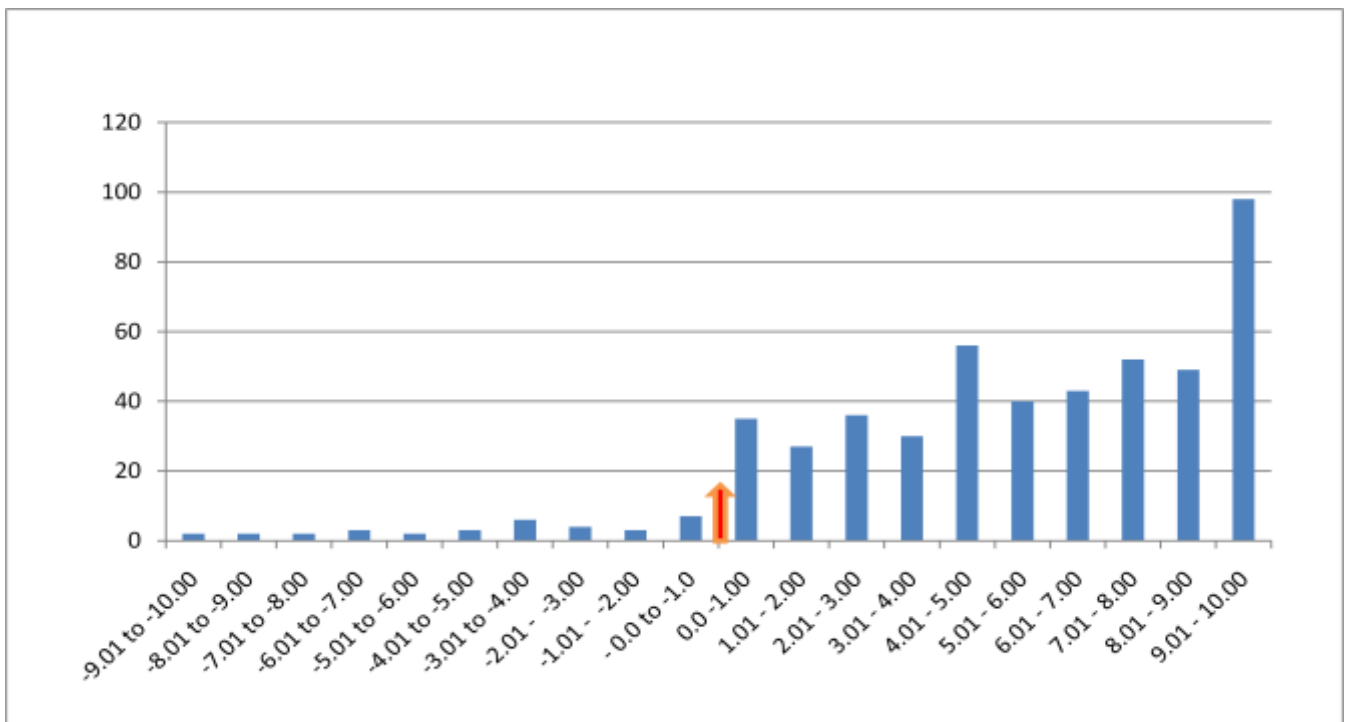


Figure 6. ED Data: Coping: Frequency of TTO Scores (N = 380)

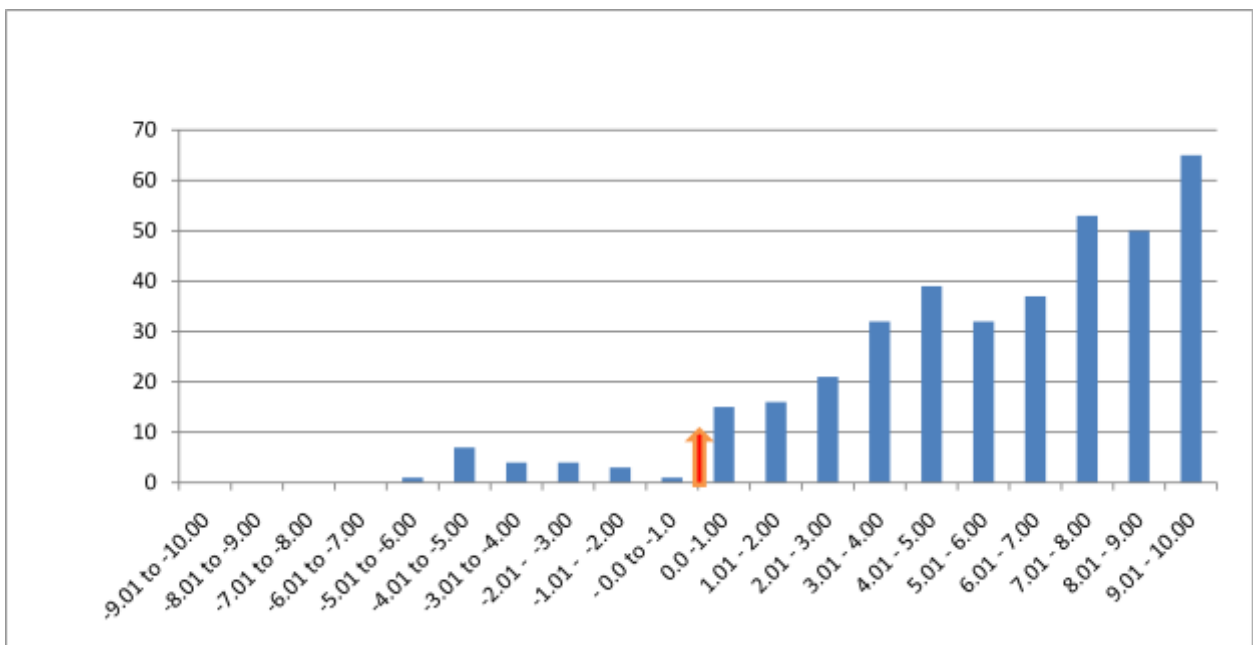


Figure 7. ED Data: Relationships: Frequency of TTO Scores (N = 409)

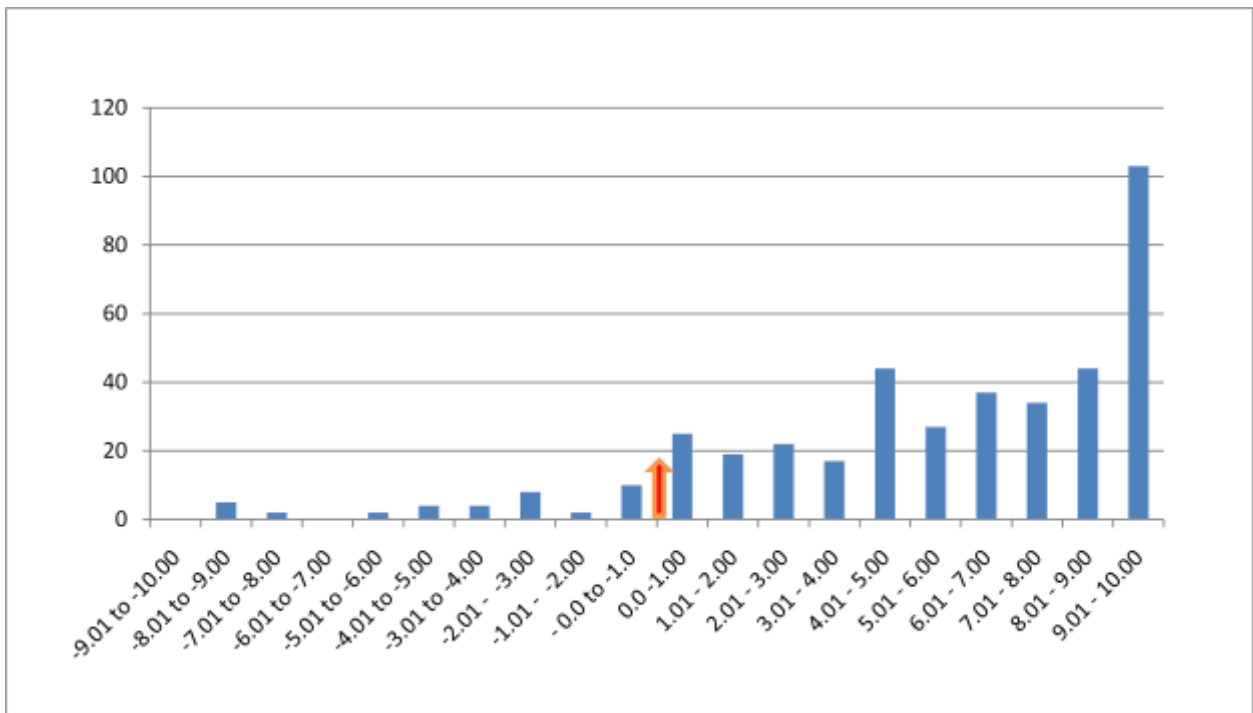


Figure 8. ED Data: Self Worth: Frequency of TTO Scores (N = 380)

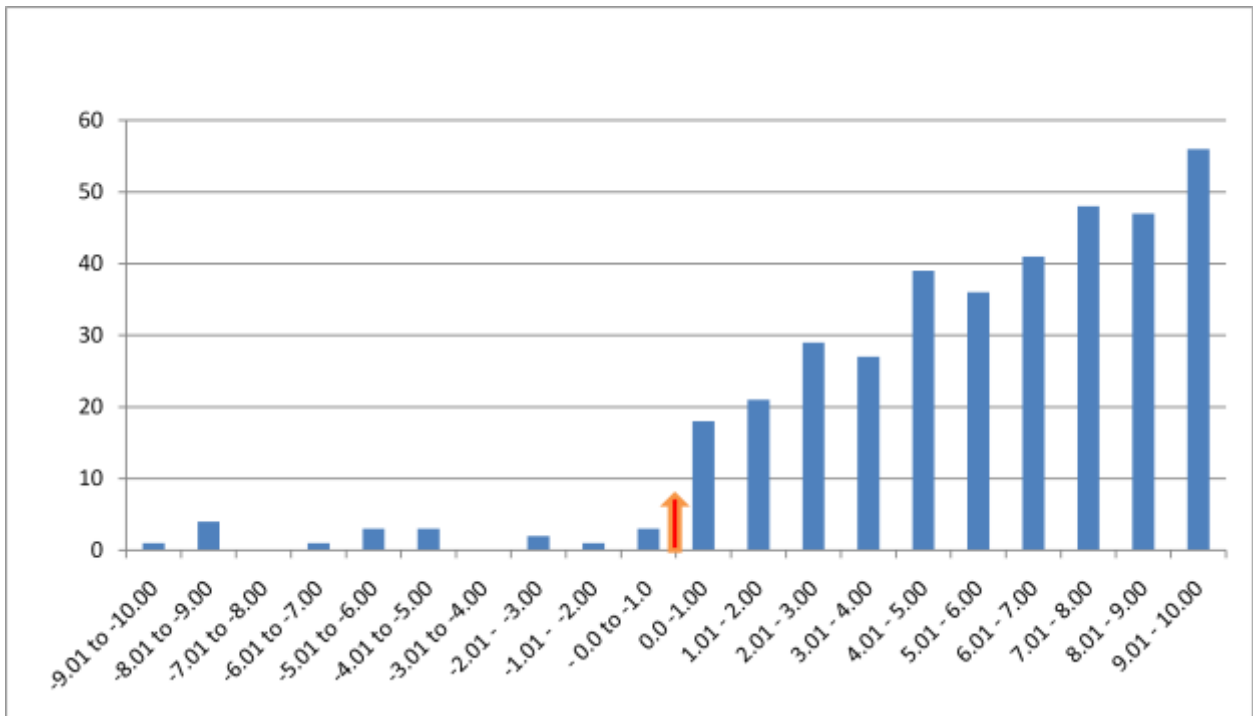


Figure 9. ED Data: Pain: Frequency of TTO Scores (N = 355)

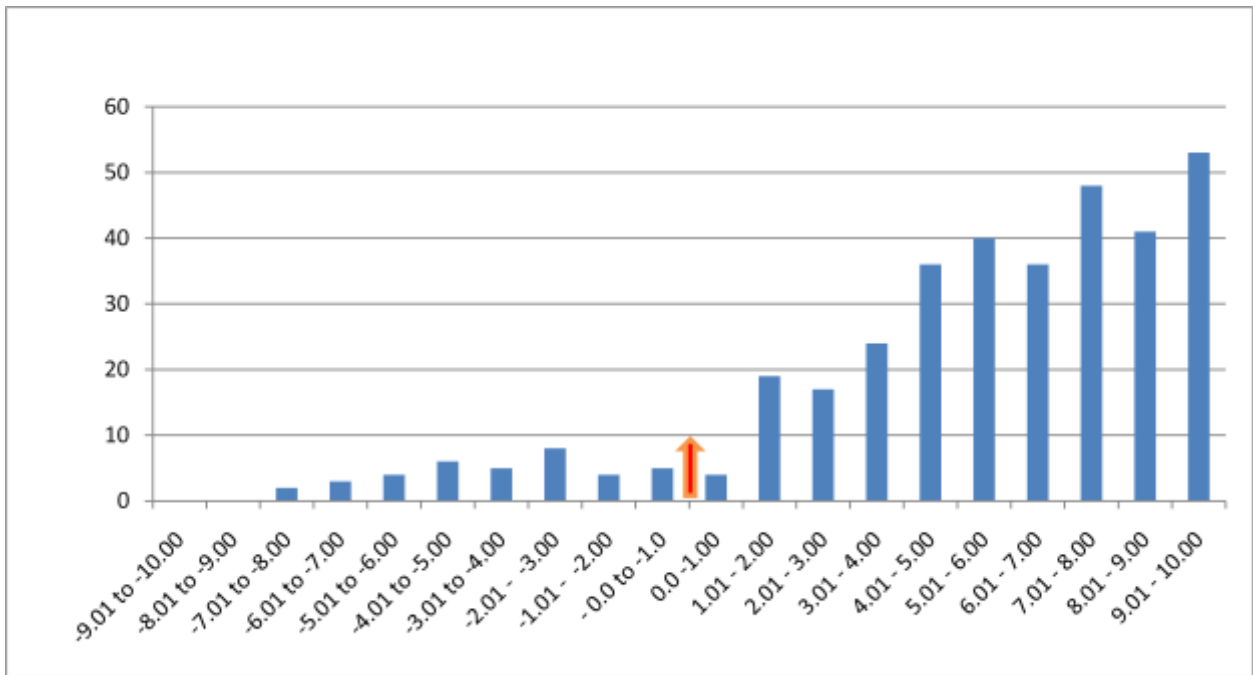
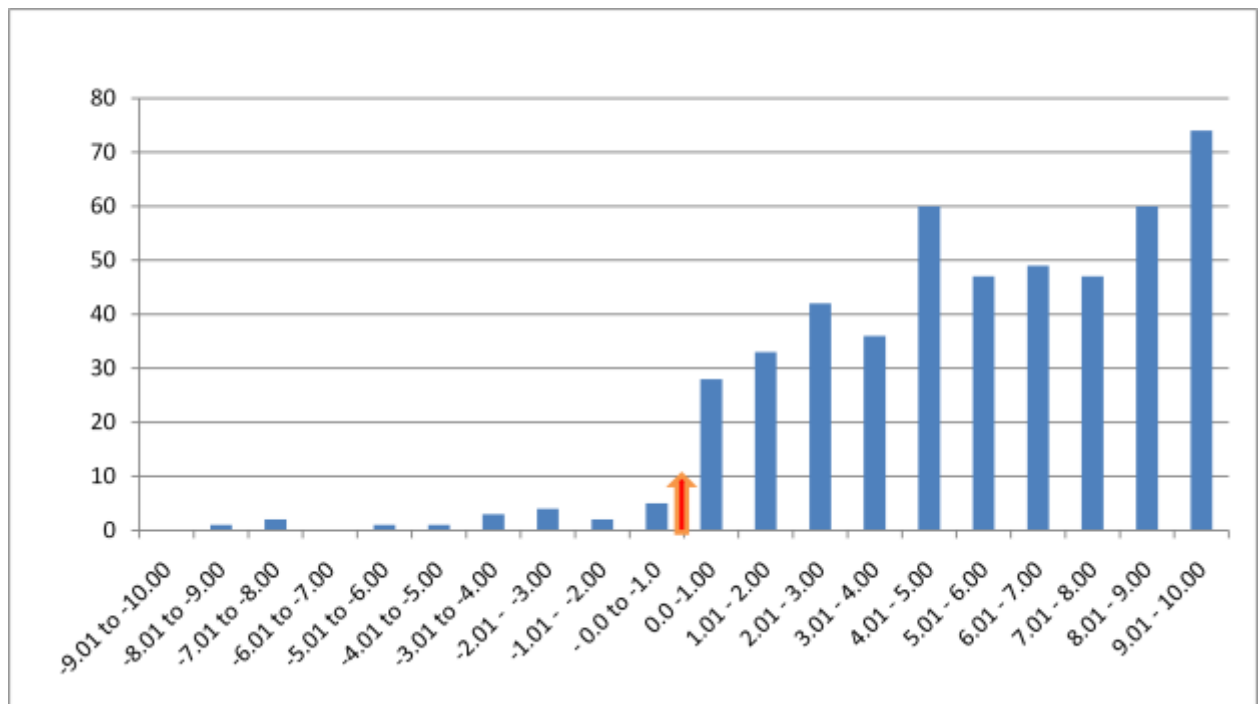


Figure 10. ED Data: Senses: Frequency of TTO Scores (N = 495)



A similar procedure was carried out to obtain multi attribute health state definitions and TTO scores for adjusting the AQL-8D multiplicative model. As the number of combinations of health states needed to satisfy the three criteria above was much larger a new and efficient method of data collection was used. First, a basic set of MA health states were created spanning all dimensions but with additional emphasis on health states which overlap dimensions which are highly correlated. These basic health states are defined in Appendix D by the dimension and item levels included. After the evaluation of each of these states respondents were asked for a second evaluation after one or more of the items in the health state had been set at a worse level. This procedure was repeated with a third health state to achieve a significantly worse scenario than the basic state. This procedure of assessing deteriorating health states was then reversed and respondents were asked to evaluate two health states which were an improvement upon the basic health state. The advantage of this procedure is that it significantly reduced the cognitive burden on respondents as the task of envisaging a modified health state is less than the initial task of imagining the basic state.

These procedures resulted in 59 basic health states which, with the additional four states per basic gave a total of 294 health states which were evaluated. Mean scores and numbers of respondents per health state are reported in Appendix E.

The frequency distribution of TTO scores is reported in Table 12 in which TTO C is the score for the basic health state. TTO A, TTO B are the derivative worse states and TTO D, TTO E are the derivative better states. Figure 11 gives the combined frequency distribution.

The method of generating health states resulted in a significant number of observations across the full range of positive utility scores. This is shown in the frequency distribution of TTO scores in Figure 10. The interpretation of the horizontal axis is the same as in previous figures. The negative and positive ranges cannot be directly compared.

Table 12. Frequency Distribution: MA Health States* (TTO): E Data

| Positive scores | | | | | | | | | | | | |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| TTO Score | TTO A | | TTO B | | TTO C | | TTO D | | TTO E | | Total | |
| | Freq. | % | Freq. | % | Freq. | % | Freq. | % | Freq. | % | Freq | % |
| 0.0 - 1.00 | 93 | 17.4 | 36 | 6.2 | 18 | 2.9 | 2 | 0.3 | 1 | 0.2 | 150 | 5.0 |
| 1.01 - 2.00 | 80 | 14.9 | 58 | 10.0 | 20 | 3.3 | 7 | 1.1 | 1 | 0.2 | 166 | 5.6 |
| 2.01 - 3.00 | 74 | 13.8 | 59 | 10.2 | 42 | 6.9 | 12 | 1.9 | 1 | 0.2 | 188 | 6.3 |
| 3.01 - 4.00 | 62 | 11.6 | 72 | 12.4 | 49 | 8.0 | 16 | 2.5 | 3 | 0.5 | 202 | 6.8 |
| 4.01 - 5.00 | 99 | 18.5 | 96 | 16.6 | 105 | 17.1 | 54 | 8.6 | 9 | 1.4 | 363 | 12.1 |
| 5.01 - 6.00 | 41 | 7.6 | 75 | 13.0 | 83 | 13.5 | 54 | 8.6 | 20 | 3.2 | 273 | 9.1 |
| 6.01 - 7.00 | 39 | 7.3 | 74 | 12.8 | 85 | 13.9 | 76 | 12.1 | 31 | 4.9 | 305 | 10.2 |
| 7.01 - 8.00 | 16 | 3.0 | 57 | 9.8 | 88 | 14.4 | 121 | 19.3 | 73 | 11.5 | 355 | 11.9 |
| 8.01 - 9.00 | 15 | 2.8 | 26 | 4.5 | 67 | 10.9 | 127 | 20.2 | 132 | 20.9 | 367 | 12.3 |
| 9.01 - 10.00 | 17 | 3.2 | 26 | 4.5 | 56 | 9.1 | 159 | 25.3 | 362 | 57.2 | 620 | 20.7 |
| Total | 536 | 100.0 | 579 | 100.0 | 613 | 100.0 | 628 | 100.0 | 633 | 100.0 | 2989 | 100.0 |

| Negative scores (Worse than Death) | | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| TTO Score | TTO A | | TTO B | | TTO C | | TTO D | | TTO E | | Total | |
| | Freq. | % | Freq. | % | Freq. | % | Freq. | % | Freq. | % | Freq | % |
| -0.0 to -1.00 | 20 | 20.4 | 10 | 17.5 | 2 | 8.7 | | | | | 32 | 16.9 |
| -1.01 to -2.00 | 12 | 12.2 | 7 | 12.3 | 2 | 8.7 | | | | | 21 | 11.1 |
| -2.01 to -3.00 | 19 | 19.4 | 11 | 19.3 | 5 | 21.7 | 2 | 25.0 | | | 37 | 19.6 |
| -3.01 to -4.00 | 15 | 15.3 | 6 | 10.5 | 2 | 8.7 | 1 | 12.5 | 1 | 33.3 | 25 | 13.2 |
| -4.01 to -5.00 | 13 | 13.3 | 10 | 17.5 | 5 | 21.7 | | | | | 28 | 14.8 |
| -5.01 to -6.00 | 5 | 5.1 | 4 | 7.0 | 4 | 17.4 | 1 | 12.5 | | | 14 | 7.4 |
| -6.01 to -7.00 | 4 | 4.1 | 1 | 1.8 | 2 | 8.7 | 1 | 12.5 | | | 8 | 4.2 |
| -7.01 to -8.00 | 4 | 4.1 | 3 | 5.3 | | | 1 | 12.5 | | | 8 | 4.2 |
| -8.01 to -9.00 | 5 | 5.1 | 4 | 7.0 | 1 | 4.3 | 2 | 25.0 | | | 12 | 6.3 |
| -9.01 to -10.00 | 1 | 1.0 | 1 | 1.8 | | | | | 2 | 66.7 | 4 | 2.1 |
| Total | 98 | 100.0 | 57 | 100.0 | 23 | 100.0 | 8 | 100.0 | 3 | 100.0 | 189 | 100.0 |

*Health states include all dimensions

**Figure 11. Frequency Distribution of Multi-Attribute (MA) TTO Scores by type of observation
N = 3178**

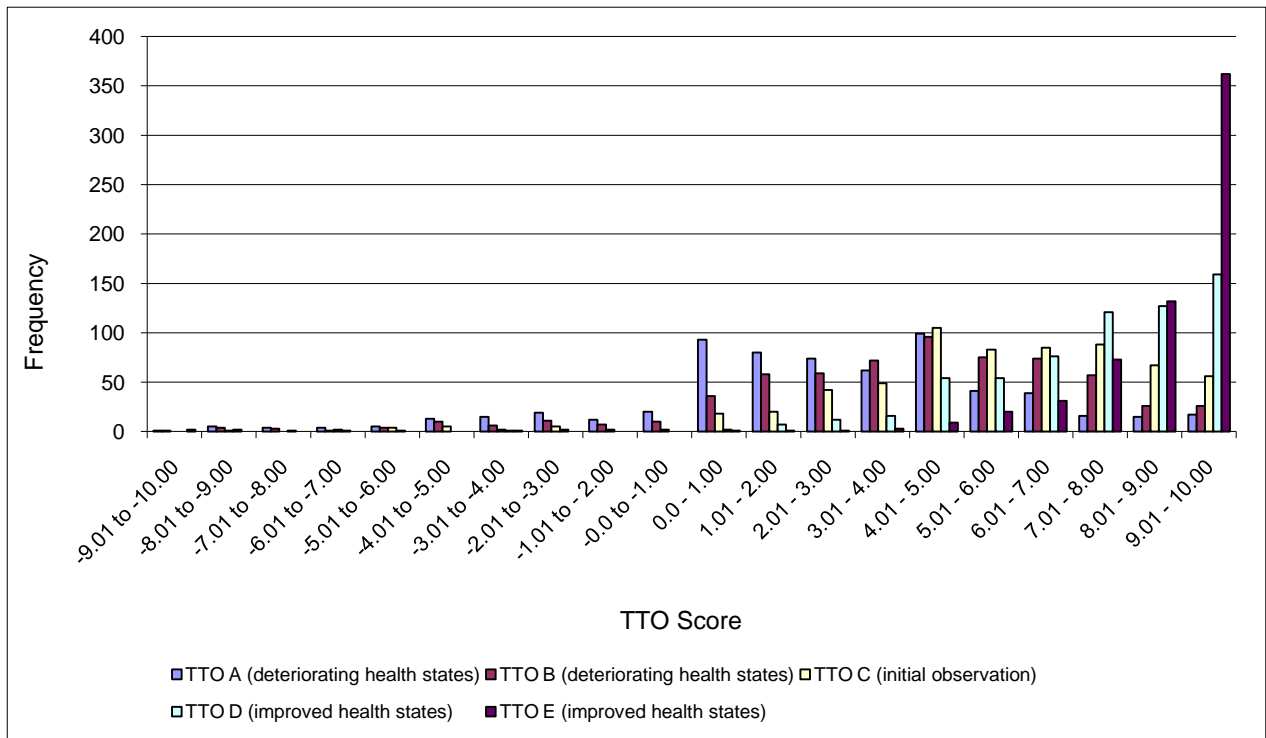
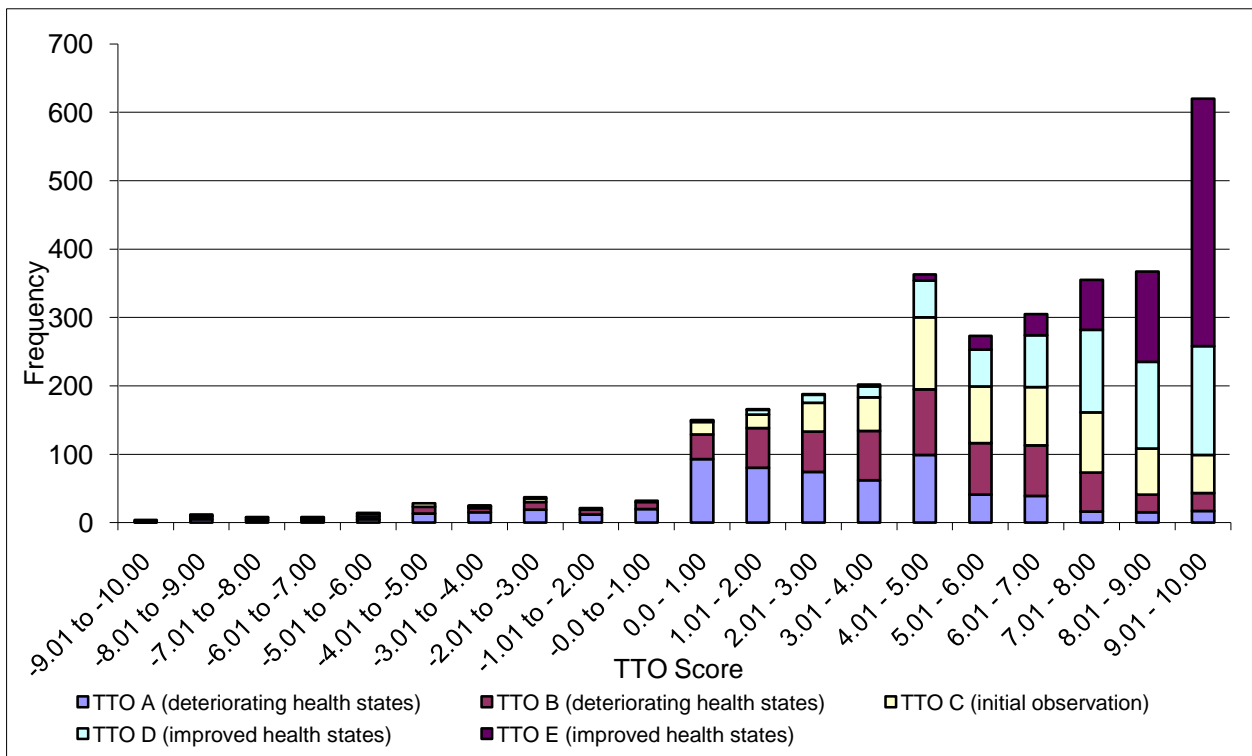


Figure 12. Cumulative frequency distribution of Multi Attribute (MA) TTO scores, N = 3178



4 Endnote

Data described in this report have been used to construct the dimension and final AQoL-8D utility score. The theory and methods for this are described in detail in Richardson et al. (2009). The psychometric analysis for the construction of the descriptive system are in Hawthorne et al. (forthcoming) and the calculation of the final utility weights are in Sinha et al. (forthcoming).

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Hawthorne G, Elsworth G, Iezzi A, Mihalopoulos C, Schweitzer I, Herrman (forthcoming) Construction of the PsyQoL Descriptive Instrument.

Iezzi A, Richardson J (2009a) Measuring Quality of Life at the Centre for Health Economics: Description of instruments, interview props and their administration, Research Paper 41, Centre for Health Economics, Monash University, Melbourne.

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Richardson J, Hawthorne G, Day N, Osborne R & McNeil H (1998), Difficulty with life and death: methodological issues and results from the utility scaling of the Assessment of Quality of Life (AQoL) instrument, Working Paper 70, Centre for Health Program Evaluation, Monash University, Melbourne.

Richardson J, Hawthorne G (2001), Negative Utility Scores and Evaluating the AQoL All Worst Health State, Working Paper 113, Centre for Health Program Evaluation, Monash University, Melbourne.

Richardson J, Sinha K, Iezzi A, Khan M, Mihalopoulos C, Herrman H, Hawthorne G, Schweitzer I (2009) The AQoL-8D (PsyQoL) MAU Instrument (Developed as PsyQoL): Overview September 2009, Research Paper 39, Centre for Health Economics, Monash University, Melbourne.

Appendix A Construction Survey Questions

| Summary | |
|--------------------|------------------------|
| Area | Number of items |
| Personal questions | |
| Independent living | (4) |
| Relationships | (14) |
| Mental health | (35) |
| Coping | (4) |
| Pain | (5) |
| Life satisfaction | (17) |
| Self worth | (7) |
| Leisure | (6) |
| AQoL-4D items | (12) |
| AQoL-6D items | (20) |
| K10 items | (10) |
| Total | 133 |

Questionnaire

AQoL-8D Construction Item Bank

v3WorkingResearchersOriginal-1

SOME QUESTIONS ABOUT YOURSELF

You are:

- Male
- Female

In what year were you born? 19____

Where were you born?

- Australia
- Other

How well do you understand/speak English? *Please tick one box:*

- Very well
- Well
- Not very well

Currently what is your highest level of education? *Please tick one box:*

- Primary school
- High school
- Trade qualification, apprenticeship --> discipline_____
- Technical & Further Education (TAFE) --> discipline_____
- University/college --> discipline_____

Which best describes your current work situation? *Tick as many boxes as apply:*

- Full time: self-employed or employee
- Part time or casual: self-employed or employee
- Unemployed, seeking work
- Retired or on a pension
- Homemaker
- Student
- Other --> please describe_____

How would you rate your current level of health, for someone of your age?

- Excellent
- Very good
- Good
- Fair
- Poor
- Very poor

Do you currently have a significant illness?

- No
- Yes Name of illness: _____

Tick the box that best describes your situation as it has been *over the past week*

INDEPENDENT LIVING

1 How difficult is it for you to join in activities?

- Not at all
- Slightly
- Moderately
- Very
- Extremely

2 Are you able to take care of yourself?

- Not at all
- A little
- A moderate amount
- A lot

3 Are you able to do physical activities that are normal for your age?

- I have no difficulty
- I have to make an effort
- I have to make a big effort
- I have extreme difficulty doing these things
- I can't do these things

4 How easily can you manage jobs around the house (eg cooking, cleaning or gardening)?

- Very easily
- Easily
- With a little difficulty
- With a lot of difficulty
- Not at all

RELATIONSHIPS

5 Your close relationships (family and friends) are:

- Always satisfying
- Mostly satisfying
- Often satisfying
- Rarely satisfying
- Never satisfying

6 How much do you enjoy your close relationships (family and friends)?

- Immensely
- A lot
- A little
- Not much
- I hate it

7 Your close relationships (family and friends) are:

- Very satisfying
- Satisfying
- Neither satisfying nor dissatisfying
- Dissatisfying
- Unpleasant
- Very unpleasant

8 How much of a burden do you feel you are to other people?

- Not at all
- A little
- A moderate amount
- A lot
- Totally

9 How lonely do you feel?

- Not at all
- Slightly
- Moderately
- Very
- Extremely

Tick the box that best describes your situation as it has been over the past week

10 How often do you feel lonely?

- Never
- Rarely

-
- Sometimes
 - Often
 - All the time

11 How often do you feel socially isolated?

- Never
- Rarely
- Sometimes
- Often
- Always

12 How often do you feel socially excluded or left out?

- Never
- Rarely
- Sometimes
- Often
- Always

13 How much do you feel socially excluded?

- Not at all
- Slightly
- Moderately
- Extremely

14 How satisfied are you with your friendships?

- Very satisfied
- Satisfied
- Neither satisfied nor dissatisfied
- Dissatisfied
- Very dissatisfied

15 How much do you enjoy being with your friends?

- Immensely
- A lot
- A little
- Not at all
- I have no friends

16 Thinking about your sexual relationships, whether you have any or not, are you:

- Very happy
- Happy
- Neither happy nor unhappy
- Unhappy

Extremely unhappy

17 Are you satisfied with your close and intimate relationships (including any sexual relationships)?

Always satisfied

Often satisfied

Satisfied

Sometimes satisfied

Never satisfied

18 How satisfied are you with your close and intimate relationships (including any sexual relationships)?

Very satisfied

Satisfied

Neither satisfied nor dissatisfied

Dissatisfied

Very dissatisfied

Tick the box that best describes your situation as it has been over the past week

MENTAL HEALTH

19 Generally you feel:

Not at all depressed

A little depressed

Moderately depressed

Severely depressed

Extremely depressed

20 How often do you feel depressed?

Never

Almost never

Sometimes

Often

Very often

All the time

21 Generally you feel:

Very happy and not at all depressed

Happy

Neither happy nor unhappy

Unhappy and depressed

Very unhappy and deeply depressed

22 Feelings of depression interfere with your life:

-
- Not at all
 - A little
 - A lot but I cope
 - A lot and coping is difficult
 - So much that I can't cope

23 How often do you have trouble sleeping?

- Never
- Almost never
- Sometimes
- Often
- All the time

24 Most mornings, when you wake up, how do you feel?

- Deeply refreshed
- Refreshed
- Neither refreshed nor tired
- Slightly tired
- Tired
- Exhausted

25 How much does difficulty with sleeping bother you?

- Not at all
- Slightly
- Moderately
- Extremely

26 How often do you feel restless?

- Never
- Almost never
- Sometimes
- Often
- All the time

Tick the box that best describes your situation as it has been over the past week

27 How much does restlessness disturb you?

- Not at all
- A little
- A lot
- It deeply distresses me

28 How content are you with your life?

- Extremely

-
- Mainly
 - Moderately
 - Slightly
 - Not at all

29 How often do you feel calm?

- All the time
- Mostly
- Often
- Sometimes
- Hardly ever
- Never

30 How often do you feel hopeless?

- Never
- Almost never
- Sometimes
- Often
- All the time

31 How confident do you feel about managing your money?

- Very confident
- Reasonably confident
- Slightly confident
- Not at all confident

32 Managing your finance leads to:

- No anxiety
- A little anxiety
- A lot of anxiety
- Enormous anxiety

33 Managing your finance makes you anxious:

- Never
- Almost never
- Sometimes
- Usually
- Always

34 How often does anxiety interfere with your daily life?

- Never
- Almost never
- Sometimes

-
- Often
 - All the time

35 How often do you feel anxious or nervous?

- Never
- Almost never
- Sometimes
- Often
- All the time

Tick the box that best describes your situation as it has been over the past week

36 How anxious do you generally feel?

- Not at all
- Slightly
- Moderately
- Quite anxious
- Extremely anxious

37 How often do you feel afraid?

- Never
- Almost never
- Sometimes
- Usually
- All the time

38 Thinking about fear, generally you feel...

- No fear
- Some fear
- Moderate fear
- Extreme fear

39 How well do you feel you handle stress?

- Very well
- Well
- Neither well nor badly
- Not well
- Badly or not at all

40 How often do you feel worried?

- Never
- Almost never
- Sometimes
- Usually

All the time

41 How worried do you generally feel?

Not at all worried

Mildly worried

Moderately worried

Very worried

Extremely worried

42 How often do you feel mixed up or confused?

Never

Almost never

Sometimes

Often

All the time

43 Are you confused by day to day bill paying?

Never

Almost never

Sometimes

Usually

Always

44 How often do you feel hatred for others?

Never

Almost never

Sometimes

Often

All the time

Tick the box that best describes your situation as it has been *over the past week*

45 How much hatred do you feel for others?

None

Some

A lot

It consumes me

46 How often do you feel angry?

Never

Almost never

Sometimes

Often

All the time

47 How much anger do you feel?

- None
- Some
- A lot
- Overwhelming

48 How much anger and hatred do you feel?

- None
- Some
- A lot
- Overwhelming

49 How often do you feel anger and hatred?

- Never
- Almost never
- Sometimes
- Usually
- All the time

50 Do you want to hit out at people or objects?

- Never
- Rarely
- Sometimes
- Often
- All the time

51 How often do you get angry and become physically or verbally aggressive?

- Never
- Rarely
- Sometimes
- Often
- All the time

52 How much irritability or anger do you generally feel?

- None
- Hardly any
- Some
- A lot
- Overwhelming

53 Do you ever think of / feel like hurting yourself?

- Never
- Rarely

-
- Sometimes
 - Often
 - All the time

Tick the box that best describes your situation as it has been *over the past week*

COPING

54 **Life's day by day problems, eg paying bills, managing house, coping with people:**

- Are enjoyable
- Are easy
- Are neither easy nor hard
- Are difficult
- Ruin my life

55 **How much control of your life do you feel you have?**

- None
- Hardly any
- Some
- A lot
- Total

56 **When problems arise, you can find a strategy to deal with them:**

- Always
- Usually
- Sometimes
- Almost never
- Not at all

57 **When problems arise, you deal with them:**

- Very well
- Well
- Adequately
- Poorly
- Not at all

PAIN

58 **When problems arise, you cope with them:**

- Easily
- With some difficulty
- With a lot of difficulty but I cope
- I don't cope

59 **How much pain do you experience?**

-
- None at all
 - Mild
 - Moderate
 - Severe
 - Unbearable

60 How often do you feel pain?

- Never
- Occasionally
- Often
- Most of the time
- All the time

61 How much does pain interfere with your ordinary activities?

- Not at all
- A little
- A lot
- Totally

62 How distressing is your pain usually?

- I have no pain
- Not at all distressing
- A little distressing
- Moderately distressing
- Very distressing
- Extremely distressing

Tick the box that best describes your situation as it has been *over the past week*

LIFE SATISFACTION

63 How enthusiastic do you feel?

- Extremely
- Very
- Somewhat
- Not much
- Not at all

64 How often do you feel happy?

- All the time
- Mostly
- Sometimes
- Almost never

-
- Never
- 65 How often do you have fun?**
- Most of the time
- Often
- Sometimes
- Almost never
- Never
- 66 Do you feel joy?**
- Most of the time
- Often
- Sometimes
- Almost never
- Never
- 67 How much pleasure do you get from your usual activities?**
- A lot
- Quite a lot
- Some
- Very little
- None
- 68 How much pleasure do you get from your life?**
- A great deal
- Quite a lot
- A little
- None at all
- 69 How often do you feel pleasure?**
- Always
- Usually
- Sometimes
- Almost never
- Never
- 70 How often do you feel joy and pleasure in life?**
- Most of the time
- Often
- Sometimes
- Almost never
- Never

Tick the box that best describes your situation as it has been over the past week

71 How satisfied are you with the way you manage bills and finances?

- Very satisfied
- Quite satisfied
- Mildly satisfied
- Sometimes satisfied sometimes dissatisfied
- Mildly dissatisfied
- Always dissatisfied

72 You feel fulfilled and satisfied with your life:

- Extremely
- Very
- Somewhat
- Not at all

73 How satisfied are you with your life?

- Very satisfied
- Satisfied
- Neither satisfied nor dissatisfied
- Dissatisfied
- Very dissatisfied

74 How fulfilling is your life?

- Totally fulfilling
- Somewhat fulfilling
- Neither fulfilling nor unfulfilling
- A little unfulfilling
- Totally unfulfilling

75 Thinking about purpose and goals in your life, you are:

- Very satisfied
- Satisfied
- Neither satisfied nor dissatisfied
- Dissatisfied
- Very dissatisfied

76 How often do you have a sense of purpose and fulfilment about your life?

- Always
- Often
- Sometimes
- Seldom

77 Thinking about yourself, you feel you are:

-
- Very important
 - Important
 - Neither important nor unimportant
 - Unimportant
 - Insignificant

78 Your self esteem is:

- Very high
- High
- Neither high nor low
- Low
- Very low

79 You feel you have good self esteem:

- Always
- Usually
- Often
- Almost never
- Never

Tick the box that best describes your situation as it has been over the past week

SELF WORTH

80 How often do you feel good about yourself?

- Always
- Usually
- Sometimes
- Almost never
- Never

81 How often do you feel worthless?

- Never
- Almost never
- Sometimes
- Usually
- Always

82 How much confidence do you have in yourself?

- Complete confidence
- A lot
- A moderate amount
- A little

None at all

83 How often do you feel significant?

Always

Usually

Sometimes

Almost never

Never

84 How often do you feel inferior to others?

Never

Almost never

Sometimes

Most of the time

Always

85 How many good qualities do you think you have?

A lot

Some

Few

Hardly any

None

86 How often do you feel that you are a failure?

Never

Almost never

Sometimes

Most of the time

Always

Tick the box that best describes your situation as it has been *over the past week*

LEISURE

87 How bored do you feel with life?

Not at all

A little

Somewhat

Very

Extremely

88 You feel bored:

Never

Almost never

Sometimes

Usually

Always

89 How often do you enjoy your leisure time?

All the time

Usually

Sometimes

Almost never

Never

I don't have leisure time

90 How much do you enjoy your leisure time?

Immensely

A lot

Somewhat

A little

Not at all

I don't have leisure time

91 How do you feel about how you spend your time?

Very satisfied

Quite satisfied

Mildly satisfied

Neither satisfied nor dissatisfied

Mildly dissatisfied

Always dissatisfied

92 How satisfied are you with the amount of leisure time you get?

Very satisfied

Quite satisfied

Mildly satisfied

Neither satisfied nor dissatisfied

Mildly dissatisfied

Always dissatisfied

Tick the box that best describes your situation as it has been *over the past week*

EXISTING AQoL ITEMS

AQoL-4D items

AQoL-4D: Q1.

93 Do I need any help looking after myself?

-
- I need no help at all
- Occasionally I need some help with personal care tasks
- I need help with the more difficult personal care tasks
- I need daily help with most or all personal care tasks
- AQoL4D: Q2.** 94 **When doing household tasks: (For example: preparing food, gardening, using the video recorder, radio, telephone or washing the car)?**
- I need no help at all
- Occasionally I need some help with household tasks
- I need help with the more difficult household tasks
- I need daily help with most or all household tasks
- AQoL4D: Q3.** 95 **Thinking about how easily I can get around my home and community:**
- I get around my home and community by myself without any difficulty
- I find it difficult to get around my home and community by myself
- I cannot get around the community by myself, but I can get around my home with some difficulty
- I cannot get around either the community or my home by myself
- AQoL1: Q4.** 96 **Because of my health, my relationships (for example: with friends, partner or parents) generally:**
- Are very close and warm
- Are sometimes close and warm
- Are seldom close and warm
- I have no close and warm relationships
- My health does not affect my relationships
- AQoL4D: Q5.** 96 **Thinking about my relationship with other people:**
- I have plenty of friends, and am never lonely
- Although I have friends, I am occasionally lonely
- I have some friends, but am often lonely for company
- I am socially isolated and feel lonely
- AQoL4D: Q6.** 97 **Thinking about my health and my relationship with my family:**
- My role in my family is unaffected by my health
- There are some parts of my family role I cannot carry out
- There are many parts of my family role I cannot carry out
- I cannot carry out any part of my family role
- AQoL-4D: Q7.** 98 **Thinking about my vision, including when using glasses or contact lenses if needed:**
- I see normally

- I have some difficulty focusing on things, or I do not see them sharply. For example: small print, a newspaper or seeing objects in the distance
- I have a lot of difficulty seeing things. My vision is blurred. For example: I can see just enough to get by with
- I only see general shapes, or am blind. *For example: I need a guide to move around*

AQoL-4D: Q8.

99

Thinking about my hearing, including using a hearing aid if needed:

- I hear normally
- I have some difficulty hearing or I do not hear clearly. For example: I ask people to speak up, or turn up the TV or radio volume
- I have difficulty hearing things clearly. *For example: Often I do not understand what is said. I usually do not take part in conversations because I cannot hear what is said*
- I hear very little indeed. *For example: I cannot fully understand loud voices speaking directly to me*

AQoL-4D: Q9.

100

When I communicate with others, e.g. by talking, listening, writing or signing:

- I have no trouble speaking to them or understanding what they are saying
- I have some difficulty being understood by people who do not know me. I have no trouble understanding what others are saying to me
- I am understood only by people who know me well. I have great trouble understanding what others are saying to me
- I cannot adequately communicate with others.

AQoL-1: Q10.

101

Thinking about how I sleep:

- I am able to sleep without difficulty most of the time
- My sleep is interrupted some of the time, but I am usually able to go back to sleep without difficulty
- My sleep is interrupted most nights, but I am usually able to go back to sleep without difficulty
- I sleep in short bursts only. I am awake most of the night

AQoL-1: Q11.

102

Thinking about how I generally feel:

- I do not feel anxious, worried or depressed
- I am slightly anxious, worried or depressed
- I feel moderately anxious, worried or depressed
- I am extremely anxious, worried or depressed

AQoL-1: Q12.

103

How much pain or discomfort do I experience?

- None at all
- I have moderate pain
- I suffer from severe pain

- I suffer unbearable pain

AQoL-6D items

AQoL-6D: Q1. 104 How much help do you need with household tasks (eg preparing food, cleaning the house or gardening):

- I can do all these tasks very quickly and efficiently without any help
- I can do these tasks relatively easily without help
- I can do all these tasks only very slowly without help
- I cannot do most of these tasks unless I have help
- I can do none of these tasks by myself

AQoL-6D: Q2 . 105 Thinking about how easy or difficult it is for you to get around by yourself outside your house (eg shopping, visiting):

- Getting around is enjoyable and easy
- I have no difficulty getting around outside my house
- A little difficulty
- Moderate difficulty
- A lot of difficulty
- I cannot get around unless somebody is there to help me

AQoL-6D: Q3. 106 Thinking about how well you can walk:

- I find walking or running very easy
- I have no real difficulty with walking or running
- I find walking or running slightly difficult. I cannot run to catch a tram or train, I find walking uphill difficult
- Walking is difficult for me. I walk short distances only, I have difficulty walking up stairs
- I have great difficulty walking. I cannot walk without a walking stick or frame, or someone to help me
- I am bedridden

AQoL-2: Q4. 107 Thinking about washing yourself, toileting, dressing, eating or looking after your appearance:

- These tasks are very easy for me
- I have no real difficulty in carrying out these tasks
- I find some of these tasks difficult, but I manage to do them on my own
- Many of these tasks are difficult, and I need help to do them
- I cannot do these tasks by myself at all

AQoL-2: Q5. 108 Your close and intimate relationships (including any sexual relationships) make you feel:

- Very happy
- Generally happy

-
- Neither happy nor unhappy
 - Generally unhappy
 - Very unhappy

AQoL-6D: Q6. 109 **Thinking about your health and your relationship with your family:**

- My role in my family is unaffected by my health
- There are some parts of my family role I cannot carry out
- There are many parts of my family role I cannot carry out
- I cannot carry out any part of my family role

AQoL-6D: Q7 110 **Thinking about your health and your role in your community (that is to say neighbourhood, sporting, work, church or cultural groups):**

- My role in the community is unaffected by my health
- There are some parts of my community role I cannot carry out
- There are many parts of my community role I cannot carry out
- I cannot carry out any part of my community role

AQoL6D: Q8. 111 **How often did you feel in despair over the last seven days?**

- Never
- Occasionally
- Sometimes
- Often
- All the time

AQoL-6D: Q9. 112 **And still thinking about the last seven days: how often did you feel worried:**

- Never
- Occasionally
- Sometimes
- Often
- All the time

AQoL-6D: Q10. 113 **How often do you feel sad?**

- Never
- Rarely
- Some of the time
- Usually
- Nearly all the time

AQoL-6D: Q11. 114 **When you think about whether you are calm and tranquil or agitated, are you:**

-
- Always calm and tranquil
 - Usually calm and tranquil
 - Sometimes calm and tranquil, sometimes agitated
 - Usually agitated
 - Always agitated

**AQoL-2:
Q12.** **115** **Thinking about how much energy you have to do the things you want to do, you are:**

- Always full of energy
- Usually full of energy
- Occasionally full of energy
- Usually tired and lacking energy
- Always tired and lacking energy

**AQoL-
6D: Q13.** **116** **How often do you feel in control of your life?**

- Always
- Mostly
- Sometimes
- Only occasionally
- Never

**AQoL-
6D: Q14.** **117** **How much do you feel you can cope with life's problems?**

- Completely
- Mostly
- Partly
- Very little
- Not at all

**AQoL-
6D: Q15.** **118** **Thinking about how often you experience serious pain, you experience it:**

- Very rarely
- Less than once a week
- Three to four times a week
- Most of the time

**AQoL-2:
Q16.** **119** **How much pain or discomfort do you experience?**

- None at all
- I have moderate pain
- I suffer from severe pain
- I suffer unbearable pain

AQoL-2: **120** **How often does pain interfere with your usual activities?**

Q17.

- Never
- Almost never
- Sometimes
- Often
- Always

**AQoL-2:
Q18.**

121 Thinking about your vision (using your glasses or contact lenses if needed):

- I have excellent sight
- I see normally
- I have some difficulty focusing on things, or I do not see them sharply. E.g. small print, a newspaper or seeing objects in the distance
- I have a lot of difficulty seeing things. My vision is blurred. I can see just enough to get by with
- I only see general shapes. I need a guide to move around
- I am completely blind

**AQoL-2:
Q19.**

122 Thinking about your hearing (using your hearing aid if needed):

- I have excellent hearing
- I hear normally
- I have some difficulty hearing or I do not hear clearly. I have trouble hearing softly-spoken people or when there is background noise
- I have difficulty hearing things clearly. Often I do not understand what is said. I usually do not take part in conversations because I cannot hear what is said
- I hear very little indeed. I cannot fully understand loud voices speaking directly to me
- I am completely deaf

**AQoL-2:
Q20.**

123 When you communicate with others, e.g. by talking, listening, writing or signing:

- have no trouble speaking to them or understanding what they are saying
- I have some difficulty being understood by people who do not know me. I have no trouble understanding what others are saying to me
- I am understood only by people who know me well. I have great trouble understanding what others are saying to me
- I cannot adequately communicate with others.

K10 ITEMS

124 In the past 4 weeks, about how often did you feel tired for no good reason?

- All of the time
- Most of the time
- Some of the time

A little of the time

None of the time

125 In the past 4 weeks, about how often did you feel nervous?

All of the time

Most of the time

Some of the time

A little of the time

None of the time

126 In the past 4 weeks, about how often did you feel so nervous that nothing could calm you down?

All of the time

Most of the time

Some of the time

A little of the time

None of the time

127 In the past 4 weeks, about how often did you feel hopeless?

All of the time

Most of the time

Some of the time

A little of the time

None of the time

128 In the past 4 weeks, about how often did you feel restless or fidgety?

All of the time

Most of the time

Some of the time

A little of the time

None of the time

128 In the past 4 weeks, about how often did you feel so restless that you could not sit still?

All of the time

Most of the time

Some of the time

A little of the time

None of the time

130 In the past 4 weeks, about how often did you feel depressed?

All of the time

Most of the time

Some of the time

A little of the time

None of the time

131 In the past 4 weeks, about how often did you feel that everything was an effort?

All of the time

Most of the time

Some of the time

A little of the time

None of the time

132 In the past 4 weeks, about how often did you feel so sad that nothing could cheer you up?

All of the time

Most of the time

Some of the time

A little of the time

None of the time

133 In the past 4 weeks, about how often did you feel worthless?

All of the time

Most of the time

Some of the time

A little of the time

None of the time

Appendix B

Item responses: Patient, public and total mean VAS scores

Within item response level score on item best/worst scale (VAS scale 0-100) (A data)

| Dimension | Response level within Items | Mean VAS Score | | | SE | | | Sig. |
|---------------------------|--|----------------|---------|-------|--------|---------|-------|-------|
| | | Public | Patient | Total | Public | Patient | Total | |
| Independent Living | | | | | | | | |
| Household help | Can do jobs relatively easily without help | 87.23 | 85.85 | 86.59 | 0.876 | 1.096 | 0.692 | 0.323 |
| | Can do jobs only very slowly without help | 53.69 | 53.44 | 53.57 | 1.577 | 1.662 | 1.142 | 0.913 |
| | Cannot do most jobs without help | 19.47 | 21.93 | 20.6 | 1.227 | 1.412 | 0.929 | 0.187 |
| Get around outside | No difficulty getting around outside | 92.74 | 88.52 | 90.78 | 0.542 | 1.117 | 0.607 | 0.000 |
| | A little difficulty getting around outside | 70.11 | 66.71 | 68.53 | 1.281 | 1.442 | 0.962 | 0.078 |
| | Moderately difficulty getting around outside | 47.12 | 45.94 | 46.57 | 1.303 | 1.347 | 0.936 | 0.532 |
| | A lot of difficulty getting around outside | 16.9 | 19.13 | 17.94 | 1.055 | 1.446 | 0.878 | 0.207 |
| Walking | No real difficulty walking or running | 90.66 | 90.14 | 90.42 | 0.625 | 0.91 | 0.538 | 0.626 |
| | Slight difficulty walking or running | 68.8 | 66.83 | 67.89 | 1.328 | 1.469 | 0.985 | 0.319 |
| | Walking difficult | 36.4 | 40.83 | 38.46 | 1.289 | 1.519 | 0.995 | 0.026 |
| | Great difficulty walking | 14.53 | 17.19 | 15.76 | 1.101 | 1.608 | 0.953 | 0.165 |
| Personal Care | No real difficulty carrying out these tasks | 91.41 | 86.94 | 89.34 | 0.525 | 1.165 | 0.624 | 0.000 |
| | Some difficulty carrying out these tasks | 59.78 | 58.11 | 59 | 1.306 | 1.434 | 0.965 | 0.391 |
| | Many tasks difficult and require help to do | 19.78 | 23.56 | 21.54 | 1.164 | 1.679 | 1.003 | 0.060 |
| Life Satisfaction | | | | | | | | |
| Content | Mainly content with life | 86.74 | 81.73 | 84.41 | 0.696 | 1.629 | 0.855 | 0.003 |
| | Moderately content with life | 62.46 | 56.98 | 59.92 | 1.155 | 1.419 | 0.917 | 0.003 |
| | Slightly content with life | 31.98 | 26.74 | 29.55 | 1.438 | 1.591 | 1.077 | 0.015 |
| Enthusiastic | Very enthusiastic | 87.59 | 85.43 | 86.59 | 0.702 | 1.483 | 0.786 | 0.170 |
| | Somewhat enthusiastic | 62.15 | 59.06 | 60.72 | 1.007 | 1.385 | 0.843 | 0.067 |
| | Not very enthusiastic | 28.83 | 24.6 | 26.86 | 1.403 | 1.511 | 1.034 | 0.041 |
| Happy | Mostly happy | 86.95 | 83.66 | 85.42 | 0.649 | 1.464 | 0.769 | 0.033 |
| | Sometimes happy | 57.74 | 56.2 | 57.03 | 1.153 | 1.448 | 0.913 | 0.401 |
| | Almost never happy | 16.08 | 16.2 | 16.13 | 0.947 | 1.298 | 0.786 | 0.937 |

| Dimension | Response level within Items | Mean VAS Score | | | SE | | | Sig. |
|---------------------------|--------------------------------------|----------------|---------|-------|--------|---------|-------|-------|
| | | Public | Patient | Total | Public | Patient | Total | |
| Pleasure | Usually feel pleasure | 85.67 | 82.6 | 84.25 | 0.648 | 1.258 | 0.685 | 0.025 |
| | Sometimes feel pleasure | 57.66 | 56.62 | 57.18 | 1.062 | 1.23 | 0.805 | 0.519 |
| | Almost never feel pleasure | 17.89 | 18.11 | 17.99 | 1.172 | 1.459 | 0.922 | 0.903 |
| Mental Health | | | | | | | | |
| Depressed | Almost never depressed | 90.72 | 86.88 | 88.77 | 0.463 | 0.853 | 0.501 | 0.000 |
| | Sometimes depressed | 68.55 | 61.05 | 64.74 | 1.036 | 1.062 | 0.772 | 0.000 |
| | Often depressed | 36.47 | 33.54 | 34.98 | 1.159 | 1.097 | 0.8 | 0.066 |
| | Very often depressed | 14.93 | 13 | 13.95 | 1.004 | 0.897 | 0.673 | 0.153 |
| Sleeping | Almost never have trouble sleeping | 90.61 | 85.84 | 88.18 | 0.437 | 1.012 | 0.573 | 0.000 |
| | Sometimes have trouble sleeping | 64.61 | 54.75 | 59.6 | 1.208 | 1.275 | 0.922 | 0.000 |
| | Often have trouble sleeping | 28.18 | 20.54 | 24.29 | 1.531 | 1.213 | 0.996 | 0.000 |
| Angry | Almost never angry | 88.71 | 83.76 | 86.2 | 0.641 | 1.234 | 0.714 | 0.000 |
| | Sometimes angry | 64.07 | 54.34 | 59.14 | 1.19 | 1.25 | 0.907 | 0.000 |
| | Often angry | 26.46 | 18.52 | 22.44 | 1.425 | 1.165 | 0.945 | 0.000 |
| Self-harm | Rarely feel like hurting yourself | 80.75 | 80.84 | 80.79 | 1.661 | 1.664 | 1.174 | 0.971 |
| | Sometimes feel like hurting yourself | 47.73 | 40.82 | 44.23 | 1.804 | 1.641 | 1.232 | 0.005 |
| | Often feel like hurting yourself | 18.57 | 12.81 | 15.65 | 1.485 | 1.053 | 0.92 | 0.002 |
| Despair | Occasionally feel despairing | 79.79 | 76.86 | 78.3 | 1.202 | 1.65 | 1.027 | 0.153 |
| | Sometimes feel despairing | 53.97 | 50.69 | 52.31 | 1.374 | 1.398 | 0.983 | 0.096 |
| | Often feel despairing | 21.11 | 18.76 | 19.92 | 1.313 | 1.158 | 0.875 | 0.179 |
| Worried | Occasionally feel worried | 82.95 | 80.3 | 81.61 | 1.127 | 1.239 | 0.841 | 0.115 |
| | Sometimes feel worried | 61.01 | 56.24 | 58.59 | 1.347 | 1.249 | 0.926 | 0.010 |
| | Often feel worried | 28.54 | 21.74 | 25.09 | 1.517 | 1.339 | 1.028 | 0.001 |
| Sad | Rarely feel sad | 88.66 | 84.25 | 86.42 | 0.814 | 1.21 | 0.743 | 0.003 |
| | Feel sad some of the time | 61.34 | 55.76 | 58.52 | 1.385 | 1.365 | 0.984 | 0.004 |
| | Usually feel sad | 22.78 | 17.24 | 19.97 | 1.443 | 1.176 | 0.94 | 0.003 |
| Calm/tranquil or agitated | Usually calm and tranquil | 88.5 | 86.36 | 87.41 | 0.792 | 0.981 | 0.634 | 0.091 |
| | Sometimes calm and tranquil | 56.96 | 56.75 | 56.85 | 1.35 | 1.252 | 0.918 | 0.909 |
| | usually agitated | 21.28 | 19.14 | 20.19 | 1.348 | 1.2 | 0.902 | 0.236 |
| Coping | | | | | | | | |
| Energy | Usually full of energy | 88.15 | 86.38 | 87.25 | 0.698 | 1.04 | 0.63 | 0.161 |
| | Occasionally full of energy | 55.84 | 57.06 | 56.46 | 1.443 | 1.281 | 0.962 | 0.527 |
| | usually tired and lacking energy | 23.59 | 20.22 | 21.88 | 1.36 | 1.464 | 1.003 | 0.094 |

| Dimension | Response level within Items | Mean VAS Score | | | SE | | | Sig. |
|---------------------------|---|----------------|---------|-------|--------|---------|-------|-------|
| | | Public | Patient | Total | Public | Patient | Total | |
| Control | Mostly feel in control | 87.3 | 85.84 | 86.56 | 0.587 | 0.953 | 0.564 | 0.193 |
| | Sometimes feel in control | 54.8 | 55.29 | 55.05 | 1.214 | 1.241 | 0.867 | 0.777 |
| | Only occasionally feel in control | 23.81 | 23.52 | 23.66 | 1.298 | 1.458 | 0.976 | 0.880 |
| Cope | Mostly able to cope | 85.55 | 83.93 | 84.73 | 0.698 | 1.123 | 0.667 | 0.225 |
| | Partly able to cope | 50.82 | 50.4 | 50.61 | 1.32 | 1.29 | 0.921 | 0.818 |
| | Able to cope very little | 17.49 | 17.96 | 17.73 | 1.163 | 1.17 | 0.824 | 0.777 |
| Relationships | | | | | | | | |
| Enjoy close relationships | Enjoy close relationships a lot | 89.24 | 86.7 | 88.06 | 0.613 | 1.13 | 0.623 | 0.042 |
| | Enjoy close relationships a little | 54.65 | 53.17 | 53.96 | 1.469 | 1.531 | 1.059 | 0.487 |
| | Don't enjoy close relationships much | 22.92 | 18.88 | 21.04 | 1.428 | 1.512 | 1.044 | 0.053 |
| Close relationships | Close relationships satisfying | 86.93 | 86.05 | 86.52 | 0.625 | 1.044 | 0.588 | 0.456 |
| | Close relationships neither satisfying nor dissatisfying | 53.99 | 54.98 | 54.45 | 1.167 | 1.277 | 0.86 | 0.567 |
| | Close relationships dissatisfying | 29.62 | 32.27 | 30.85 | 1.219 | 1.348 | 0.906 | 0.146 |
| | Close relationships unpleasant | 12.73 | 13.19 | 12.94 | 0.979 | 1.274 | 0.789 | 0.775 |
| Socially isolated | Rarely feel socially isolated | 88.24 | 82.62 | 85.63 | 0.621 | 1.526 | 0.8 | 0.000 |
| | Sometimes feel socially isolated | 60.13 | 53.56 | 57.08 | 1.236 | 1.542 | 0.994 | 0.001 |
| | Often feel socially isolated | 22.64 | 21.3 | 22.02 | 1.202 | 1.656 | 1.002 | 0.504 |
| Socially excluded | Rarely feel socially excluded | 87.48 | 81.48 | 84.69 | 0.717 | 1.586 | 0.849 | 0.000 |
| | Sometimes feel socially excluded | 56.83 | 53.39 | 55.23 | 1.318 | 1.448 | 0.979 | 0.079 |
| | Often feel socially excluded | 21.53 | 20.11 | 20.87 | 1.178 | 1.383 | 0.9 | 0.433 |
| Close/intimate | Generally happy with close and intimate relationships | 87.62 | 85.15 | 86.47 | 0.633 | 1.221 | 0.663 | 0.064 |
| | Neither happy nor unhappy with close and intimate relationships | 54.12 | 53.44 | 53.8 | 1.197 | 1.25 | 0.864 | 0.694 |
| | Generally unhappy in close and intimate relationships | 19.87 | 20.5 | 20.16 | 1.185 | 1.568 | 0.964 | 0.744 |
| Family role | Cannot carry out some parts of family role | 69.37 | 66.65 | 68.11 | 1.33 | 1.823 | 1.107 | 0.222 |
| | Cannot carry out many parts of family role | 26.5 | 28.38 | 27.37 | 1.292 | 1.752 | 1.067 | 0.380 |

| Dimension | Response level within Items | Mean VAS Score | | | SE | | | Sig. |
|--------------------|--|----------------|---------|-------|--------|---------|-------|-------|
| | | Public | Patient | Total | Public | Patient | Total | |
| Community role | Cannot carry out some parts of community role | 72.3 | 66.29 | 69.51 | 1.279 | 1.778 | 1.087 | 0.006 |
| | Cannot carry out many parts of community role | 34.17 | 31.31 | 32.84 | 1.535 | 1.669 | 1.131 | 0.209 |
| Self Worth | | | | | | | | |
| Burden | A little of a burden | 78.86 | 79.6 | 79.24 | 1.356 | 1.405 | 0.975 | 0.707 |
| | A moderate amount of a burden | 52.18 | 51.55 | 51.86 | 1.429 | 1.311 | 0.967 | 0.748 |
| | A lot of burden | 20.52 | 19.76 | 20.14 | 1.377 | 1.396 | 0.979 | 0.700 |
| Worthless | Almost never feel worthless | 88.7 | 84.46 | 86.55 | 0.714 | 1.345 | 0.775 | 0.006 |
| | Sometimes feel worthless | 56.5 | 52.2 | 54.32 | 1.504 | 1.377 | 1.025 | 0.036 |
| | Usually feel worthless | 19.99 | 17.95 | 18.96 | 1.381 | 1.258 | 0.933 | 0.277 |
| Confidence | A lot of confidence | 89.96 | 87.32 | 88.62 | 0.53 | 0.927 | 0.542 | 0.014 |
| | A moderate amount of confidence | 64.34 | 60.06 | 62.17 | 1.148 | 1.275 | 0.866 | 0.013 |
| | A little confidence | 29.71 | 24.99 | 27.32 | 1.512 | 1.457 | 1.057 | 0.025 |
| Pain | | | | | | | | |
| Serious Pain | Experience serious pain less than once a week | 71.93 | 72.09 | 72.01 | 1.483 | 1.758 | 1.151 | 0.945 |
| | Experience serious pain three or four times a week | 24.73 | 24.86 | 24.8 | 1.454 | 1.541 | 1.059 | 0.950 |
| Pain or discomfort | Experience moderate pain | 60.36 | 66.91 | 63.68 | 1.618 | 1.658 | 1.172 | 0.005 |
| | Experience serious pain | 18.41 | 19.87 | 19.15 | 1.215 | 1.531 | 0.98 | 0.456 |
| Pain interfere | Pain almost never interferes with usual activities | 86.72 | 84.2 | 85.44 | 0.876 | 1.101 | 0.708 | 0.076 |
| | Pain sometimes interferes with usual activities | 57.93 | 52.57 | 55.21 | 1.17 | 1.351 | 0.907 | 0.003 |
| | Pain often interferes with usual activities | 22.36 | 20.84 | 21.59 | 1.229 | 1.489 | 0.967 | 0.434 |
| Senses | | | | | | | | |
| Vision | Normal sight | 89.59 | 89.56 | 89.58 | 0.677 | 1.028 | 0.598 | 0.975 |
| | Some difficulty seeing things sharply | 67.48 | 66.48 | 67.01 | 1.262 | 1.537 | 0.981 | 0.612 |
| | A lot of difficulty seeing things (blurred) | 35.8 | 36.33 | 36.04 | 1.35 | 1.716 | 1.074 | 0.805 |
| | Only able to see general shapes | 15.88 | 18.44 | 17.07 | 1.228 | 1.759 | 1.05 | 0.224 |

| Dimension | Response level within Items | Mean VAS Score | | | SE | | | Sig. |
|-------------|--|----------------|---------|-------|--------|---------|-------|-------|
| | | Public | Patient | Total | Public | Patient | Total | |
| Hearing | Normal hearing | 91.03 | 91.54 | 91.27 | 0.609 | 0.848 | 0.51 | 0.625 |
| | Some difficulty hearing things clearly | 66.94 | 66.44 | 66.7 | 1.158 | 1.554 | 0.95 | 0.793 |
| | Difficulty hearing things clearly | 39.28 | 43.22 | 41.11 | 1.251 | 1.692 | 1.038 | 0.058 |
| | Hear very little | 15.48 | 18.47 | 16.87 | 1.011 | 1.778 | 0.99 | 0.133 |
| Communicate | Some difficulty being understood by strangers, no trouble understanding others | 73.99 | 73.85 | 73.92 | 1.184 | 1.472 | 0.931 | 0.941 |
| | Great trouble understanding and being understood | 22.19 | 28.01 | 24.89 | 1.214 | 1.855 | 1.092 | 0.008 |

Appendix C

Dimension MA health state definitions

Types: Within dimension MA states on dim best/dim worst scale

| Independent Living | | | | |
|---------------------------|--------|--------|--------|--------|
| Dimension and Ed number | Item 1 | Item 2 | Item 3 | Item 4 |
| Indep Living Ed 1 | 3 | 1 | 3 | 3 |
| Indep Living Ed 2 | 5 | 3 | 3 | 2 |
| Indep Living Ed 3 | 4 | 2 | 3 | 3 |
| Indep Living Ed 4 | 1 | 4 | 4 | 1 |
| Indep Living Ed 5 | 3 | 3 | 2 | 3 |
| Indep Living Ed 6 | 5 | 4 | 4 | 3 |
| Indep Living Ed 7 | 3 | 3 | 2 | 3 |
| Indep Living Ed 8 | 5 | 4 | 5 | 3 |
| Indep Living Ed 9 | 5 | 1 | 1 | 2 |
| Indep Living Ed 10 | 4 | 4 | 1 | 1 |
| Indep Living Ed 11 | 3 | 2 | 3 | 3 |
| Indep Living Ed 12 | 2 | 6 | 2 | 3 |
| Indep Living Ed 13 | 3 | 2 | 2 | 3 |
| Indep Living Ed 14 | 1 | 5 | 5 | 2 |
| Indep Living Ed 15 | 5 | 3 | 5 | 3 |
| Indep Living Ed 16 | 3 | 2 | 5 | 5 |
| Indep Living Ed 17 | 4 | 5 | 4 | 2 |
| Indep Living Ed 18 | 1 | 4 | 5 | 1 |
| Life Satisfaction | | | | |
| Dimension and Ed number | Item 1 | Item 2 | Item 3 | Item 4 |
| Life Satisfaction Ed 1 | 4 | 1 | 2 | 1 |
| Life Satisfaction Ed 2 | 1 | 2 | 2 | 2 |
| Life Satisfaction Ed 3 | 1 | 5 | 2 | 1 |
| Life Satisfaction Ed 4 | 5 | 3 | 5 | 3 |
| Life Satisfaction Ed 5 | 5 | 4 | 4 | 3 |
| Life Satisfaction Ed 6 | 3 | 1 | 2 | 2 |
| Life Satisfaction Ed 7 | 4 | 3 | 3 | 4 |
| Life Satisfaction Ed 8 | 4 | 2 | 3 | 5 |
| Life Satisfaction Ed 9 | 3 | 2 | 3 | 4 |
| Life Satisfaction Ed 10 | 5 | 4 | 4 | 5 |
| Life Satisfaction Ed 11 | 2 | 5 | 2 | 3 |
| Life Satisfaction Ed 12 | 4 | 3 | 3 | 5 |
| Life Satisfaction Ed 13 | 1 | 3 | 1 | 1 |
| Life Satisfaction Ed 14 | 2 | 1 | 2 | 3 |
| Life Satisfaction Ed 15 | 3 | 2 | 3 | 5 |
| Life Satisfaction Ed 16 | 4 | 5 | 3 | 5 |
| Life Satisfaction Ed 17 | 3 | 1 | 3 | 3 |
| Life Satisfaction Ed 18 | 5 | 5 | 3 | 4 |
| Life Satisfaction Ed 19 | 4 | 2 | 3 | 4 |

| | | | | |
|-------------------------|---|---|---|---|
| Life Satisfaction Ed 20 | 3 | 2 | 3 | 3 |
| Life Satisfaction Ed 21 | 5 | 4 | 4 | 3 |
| Life Satisfaction Ed 22 | 1 | 4 | 2 | 3 |
| Life Satisfaction Ed 23 | 5 | 4 | 5 | 4 |
| Life Satisfaction Ed 24 | 2 | 5 | 1 | 1 |

Mental Health

| Dimension and Ed number | Item 1 | Item 2 | Item 3 | Item 4 | Item 5 | Item 6 | Item 7 | Item 8 |
|-------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Mental Health Ed1 | 4 | 3 | 1 | 1 | 3 | 2 | 4 | 4 |
| Mental Health Ed 2 | 1 | 5 | 5 | 1 | 1 | 1 | 2 | 4 |
| Mental Health Ed3 | 1 | 4 | 5 | 1 | 5 | 1 | 5 | 3 |
| Mental Health Ed4 | 1 | 3 | 1 | 1 | 3 | 5 | 1 | 5 |
| Mental Health Ed5 | 5 | 5 | 3 | 5 | 5 | 5 | 3 | 4 |
| Mental Health Ed6 | 3 | 2 | 4 | 5 | 5 | 4 | 4 | 3 |
| Mental Health Ed7 | 4 | 2 | 5 | 5 | 1 | 5 | 4 | 5 |
| Mental Health Ed8 | 2 | 2 | 5 | 5 | 1 | 5 | 4 | 5 |
| Mental Health Ed9 | 5 | 4 | 1 | 3 | 3 | 1 | 3 | 3 |
| Mental Health Ed10 | 1 | 3 | 2 | 2 | 2 | 5 | 5 | 5 |
| Mental Health Ed11 | 4 | 1 | 3 | 1 | 5 | 4 | 5 | 4 |
| Mental Health Ed12 | 3 | 1 | 2 | 2 | 5 | 2 | 4 | 4 |
| Mental Health Ed13 | 5 | 5 | 2 | 2 | 5 | 2 | 4 | 1 |
| Mental Health Ed14 | 1 | 3 | 4 | 2 | 5 | 5 | 1 | 5 |
| Mental Health Ed15 | 1 | 2 | 5 | 2 | 5 | 3 | 5 | 5 |
| Mental Health Ed16 | 5 | 1 | 2 | 1 | 2 | 2 | 1 | 5 |
| Mental Health Ed17 | 1 | 5 | 2 | 1 | 2 | 2 | 1 | 5 |
| Mental Health Ed18 | 4 | 5 | 4 | 1 | 5 | 4 | 1 | 2 |

Coping

| Dimension and Ed number | Item 1 | Item 2 | Item 3 |
|-------------------------|--------|--------|--------|
| Coping Ed 1 | 1 | 2 | 2 |
| Coping Ed 2 | 1 | 5 | 2 |
| Coping Ed 3 | 5 | 4 | 2 |
| Coping Ed 4 | 1 | 1 | 2 |
| Coping Ed 5 | 5 | 1 | 2 |
| Coping Ed 6 | 5 | 1 | 2 |
| Coping Ed 7 | 5 | 2 | 1 |
| Coping Ed 8 | 5 | 5 | 4 |
| Coping Ed 9 | 2 | 1 | 1 |
| Coping Ed 10 | 2 | 2 | 2 |
| Coping Ed 11 | 2 | 4 | 2 |
| Coping Ed 12 | 2 | 1 | 2 |
| Coping Ed 13 | 2 | 2 | 4 |
| Coping Ed 14 | 2 | 2 | 1 |
| Coping Ed 15 | 2 | 5 | 5 |
| Coping Ed 16 | 2 | 4 | 1 |
| Coping Ed 17 | 4 | 2 | 2 |
| Coping Ed 18 | 4 | 4 | 4 |

| | | | |
|--------------|---|---|---|
| Coping Ed 19 | 1 | 4 | 4 |
| Coping Ed 20 | 5 | 1 | 5 |
| Coping Ed 21 | 5 | 5 | 5 |
| Coping Ed 22 | 5 | 5 | 1 |
| Coping Ed 23 | 2 | 3 | 5 |
| Coping Ed 24 | 4 | 2 | 4 |
| Coping Ed 25 | 1 | 4 | 4 |
| Coping Ed 26 | 4 | 5 | 1 |
| Coping Ed 27 | 4 | 1 | 2 |
| Coping Ed 28 | 4 | 4 | 5 |
| Coping Ed 29 | 4 | 5 | 5 |
| Coping Ed 30 | 4 | 2 | 2 |

Relationships

| Dimension and Ed number | Item 1 | Item 2 | Item 3 | Item 4 | Item 5 | Item 6 | Item 7 |
|-------------------------|--------|--------|--------|--------|--------|--------|--------|
| Relationships Ed 1 | 4 | 3 | 1 | 1 | 3 | 2 | 3 |
| Relationships Ed 2 | 3 | 1 | 2 | 1 | 5 | 2 | 4 |
| Relationships Ed 3 | 4 | 6 | 2 | 5 | 5 | 4 | 2 |
| Relationships Ed 4 | 5 | 6 | 2 | 5 | 5 | 4 | 2 |
| Relationships Ed 5 | 5 | 6 | 2 | 2 | 3 | 2 | 2 |
| Relationships Ed 6 | 4 | 6 | 4 | 1 | 5 | 1 | 1 |
| Relationships Ed 7 | 2 | 2 | 4 | 5 | 5 | 2 | 3 |
| Relationships Ed 8 | 4 | 3 | 3 | 5 | 4 | 3 | 5 |
| Relationships Ed 9 | 3 | 2 | 4 | 5 | 4 | 3 | 3 |
| Relationships Ed 10 | 2 | 1 | 5 | 4 | 2 | 2 | 4 |
| Relationships Ed 11 | 5 | 5 | 4 | 5 | 4 | 2 | 1 |
| Relationships Ed 12 | 5 | 2 | 5 | 3 | 3 | 2 | 2 |
| Relationships Ed 13 | 4 | 5 | 4 | 3 | 3 | 2 | 1 |
| Relationships Ed 14 | 2 | 1 | 2 | 3 | 4 | 3 | 1 |
| Relationships Ed 15 | 2 | 2 | 4 | 4 | 2 | 4 | 1 |
| Relationships Ed 16 | 5 | 3 | 1 | 4 | 4 | 1 | 2 |
| Relationships Ed 17 | 3 | 2 | 3 | 4 | 4 | 1 | 3 |
| Relationships Ed 18 | 3 | 4 | 1 | 4 | 1 | 3 | 2 |

Self Worth

| Dimension and Ed number | Item 1 | Item 2 | Item 3 |
|-------------------------|--------|--------|--------|
| Self Worth Ed 1 | 1 | 3 | 3 |
| Self Worth Ed 2 | 1 | 4 | 3 |
| Self Worth Ed 3 | 4 | 1 | 3 |
| Self Worth Ed 4 | 4 | 4 | 3 |
| Self Worth Ed 5 | 4 | 3 | 2 |
| Self Worth Ed 6 | 3 | 4 | 4 |
| Self Worth Ed 7 | 4 | 4 | 2 |
| Self Worth Ed 8 | 3 | 1 | 1 |
| Self Worth Ed 9 | 2 | 4 | 4 |
| Self Worth Ed 10 | 3 | 2 | 2 |
| Self Worth Ed 11 | 4 | 1 | 2 |
| Self Worth Ed 12 | 4 | 3 | 3 |

| | | | |
|------------------|---|---|---|
| Self Worth Ed 13 | 2 | 4 | 2 |
| Self Worth Ed 14 | 2 | 1 | 2 |
| Self Worth Ed 15 | 2 | 2 | 4 |
| Self Worth Ed 16 | 2 | 2 | 2 |
| Self Worth Ed 17 | 4 | 4 | 5 |
| Self Worth Ed 18 | 4 | 4 | 4 |

Pain

| Dimension and Ed number | Item 1 | Item 2 | Item 3 |
|-------------------------|--------|--------|--------|
| Pain Ed 1 | 1 | 2 | 2 |
| Pain Ed 2 | 1 | 1 | 2 |
| Pain Ed 3 | 1 | 4 | 2 |
| Pain Ed 4 | 1 | 2 | 5 |
| Pain Ed 5 | 4 | 3 | 2 |
| Pain Ed 6 | 4 | 2 | 1 |
| Pain Ed 7 | 4 | 4 | 4 |
| Pain Ed 8 | 2 | 2 | 2 |
| Pain Ed 9 | 2 | 3 | 2 |
| Pain Ed 10 | 2 | 2 | 4 |
| Pain Ed 11 | 2 | 2 | 1 |
| Pain Ed 12 | 2 | 4 | 5 |
| Pain Ed 13 | 2 | 3 | 1 |
| Pain Ed 14 | 3 | 2 | 2 |
| Pain Ed 15 | 3 | 3 | 4 |
| Pain Ed 16 | 3 | 3 | 5 |
| Pain Ed 17 | 3 | 2 | 5 |
| Pain Ed 18 | 2 | 4 | 5 |

Senses

| Dimension and Ed number | Item 1 | Item 2 | Item 3 |
|-------------------------|--------|--------|--------|
| Senses Ed 1 | 3 | 3 | 3 |
| Senses Ed 2 | 5 | 4 | 2 |
| Senses Ed 3 | 2 | 5 | 3 |
| Senses Ed 4 | 5 | 2 | 4 |
| Senses Ed 5 | 1 | 6 | 1 |
| Senses Ed 6 | 6 | 5 | 4 |
| Senses Ed 7 | 6 | 5 | 1 |
| Senses Ed 8 | 3 | 4 | 4 |
| Senses Ed 9 | 4 | 4 | 3 |
| Senses Ed 10 | 5 | 5 | 4 |
| Senses Ed 11 | 1 | 6 | 2 |
| Senses Ed 12 | 6 | 3 | 1 |
| Senses Ed 13 | 5 | 4 | 3 |
| Senses Ed 14 | 3 | 5 | 4 |
| Senses Ed 15 | 4 | 6 | 1 |
| Senses Ed 16 | 2 | 4 | 2 |
| Senses Ed 17 | 4 | 4 | 4 |
| Senses Ed 18 | 5 | 1 | 2 |

Appendix D

AQoL-8D (PsyQoL) MA health state definitions

| E Type | Indep Living | | | | Life Satisfaction | | | | Mental health | | | | | | | | Coping | | | | Relationships | | | | | | Self Worth | | | Pain | | | Senses | | |
|--------|--------------|--------|--------|--------|-------------------|--------|--------|--------|---------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------------|---------|---------|---------|---------|---------|------------|---------|---------|---------|---------|---------|---------|---------|---------|
| | Item 1 | Item 2 | Item 3 | Item 4 | Item 5 | Item 6 | Item 7 | Item 8 | Item 9 | Item 10 | Item 11 | Item 12 | Item 13 | Item 14 | Item 15 | Item 16 | Item 17 | Item 18 | Item 19 | Item 20 | Item 21 | Item 22 | Item 23 | Item 24 | Item 25 | Item 26 | Item 27 | Item 28 | Item 29 | Item 30 | Item 31 | Item 32 | Item 33 | Item 34 | Item 35 |
| A 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 2 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 |
| A 3 | 1 | 1 | 1 | 1 | 5 | 5 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 5 | 6 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 |
| A 4 | 1 | 1 | 1 | 1 | 4 | 4 | 4 | 3 | 3 | 5 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 4 | 5 | 1 | 1 | 1 | 1 | 1 | 1 |
| A 5 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 5 | 5 | 4 | 3 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 3 | 3 | 1 | 1 | 4 | 1 | 1 | 3 | 3 | 4 | 1 | 1 | 1 | 1 | 1 | 1 |
| B 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 3 | 3 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| B 2 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 2 | 4 | 4 | 4 | 4 | 1 | 2 | 2 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 |
| B 3 | 1 | 1 | 1 | 1 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 4 | 5 | 4 | 4 | 4 | 3 | 3 | 1 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 |
| B 4 | 1 | 1 | 1 | 1 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 |
| B 5 | 1 | 1 | 1 | 1 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| B 6 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 4 | 5 | 4 | 4 | 4 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| B 7 | 1 | 1 | 1 | 1 | 4 | 4 | 3 | 3 | 3 | 4 | 4 | 1 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 5 | 5 | 3 | 3 | 3 | 1 | 1 | 4 | 1 | 1 | 1 | 1 | 1 | 1 |
| B 8 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 2 | 2 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| C 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 |
| C 2 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| C 3 | 1 | 1 | 1 | 1 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| C 4 | 1 | 1 | 1 | 1 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| C 5 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 3 | 3 | 1 | 1 | 3 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 |
| C 6 | 1 | 1 | 1 | 1 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 3 | 3 | 1 | 1 | 3 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 |
| C 7 | 1 | 1 | 1 | 1 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| C 8 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| D 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| D 2 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| D 3 | 1 | 1 | 1 | 1 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| D 4 | 1 | 1 | 1 | 1 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| D 5 | 1 | 1 | 1 | 1 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| D 6 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| D 7 | 1 | 1 | 1 | 1 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| D 8 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| E 1 | 1 | 1 | 1 | 1 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 5 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| E 2 | 1 | 1 | 1 | 1 | 4 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 4 | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| E 3 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 5 | 4 | 4 | 4 | 3 | 3 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 |
| E 4 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 4 | 3 | 3 | 3 | 2 | 2 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 | 1 |
| E 5 | 1 | 1 | 1 | 1 | 4 | 4 | 4 | 4 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 1 | 1 | 1 | 3 | 4 | 3 | 3 | 3 | 2 | 2 | 4 | 4 | 4 | 1 | 1 | 1 | 1 | 1 |
| E | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 1 | 1 | 1 | 4 | 5 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 |

Appendix E

AQoL-8D TTO results for MA health states

Mean scores, numbers of respondents per health state

| Base Health State | TTO Positive Scores | | | | | | | | | | | | | | |
|-------------------|---------------------|----------|------------|---------|----------|------------|-------|----------|------------|---------|----------|------------|----------|----------|------------|
| | A (E - -) | | | B (E -) | | | C (E) | | | D (E +) | | | E (E ++) | | |
| | N | Mean TTO | Std. Error | N | Mean TTO | Std. Error | N | Mean TTO | Std. Error | N | Mean TTO | Std. Error | N | Mean TTO | Std. Error |
| 1 | 12 | 2.42 | .46 | 14 | 3.75 | .48 | 15 | 5.57 | .38 | 15 | 7.70 | .36 | 15 | 9.32 | .17 |
| 2 | 11 | 2.75 | .59 | 11 | 3.95 | .56 | 11 | 5.11 | .58 | 11 | 7.16 | .36 | 11 | 8.98 | .25 |
| 3 | 10 | 3.40 | .65 | 12 | 4.96 | .56 | 12 | 6.65 | .59 | 12 | 8.17 | .48 | 12 | 9.50 | .19 |
| 4 | 9 | 3.83 | .49 | 9 | 4.94 | .50 | 9 | 6.14 | .37 | 10 | 7.88 | .44 | 10 | 9.25 | .23 |
| 5 | 11 | 4.09 | .68 | 11 | 5.15 | .67 | 12 | 5.68 | .56 | 12 | 7.03 | .44 | 12 | 8.68 | .25 |
| 6 | 6 | 4.42 | .99 | 9 | 4.78 | .82 | 9 | 5.97 | .64 | 11 | 7.09 | .44 | 11 | 8.73 | .37 |
| 7 | 10 | 4.98 | .65 | 10 | 6.10 | .78 | 11 | 6.36 | .81 | 11 | 7.36 | .74 | 11 | 9.12 | .24 |
| 8 | 10 | 4.10 | .90 | 12 | 5.04 | .73 | 12 | 6.00 | .81 | 12 | 7.11 | .72 | 12 | 8.54 | .44 |
| 9 | 6 | 3.33 | .49 | 10 | 3.06 | .67 | 10 | 4.75 | .90 | 10 | 7.10 | .72 | 10 | 8.80 | .47 |
| 10 | 9 | 4.44 | .94 | 10 | 5.25 | .80 | 10 | 6.60 | .72 | 10 | 8.70 | .37 | 10 | 9.45 | .22 |
| 11 | 9 | 5.44 | 1.21 | 10 | 5.70 | 1.02 | 10 | 6.60 | .92 | 10 | 7.95 | .82 | 10 | 8.80 | .53 |
| 12 | 9 | 5.11 | .20 | 9 | 6.78 | .32 | 10 | 7.65 | .41 | 10 | 8.80 | .42 | 10 | 9.68 | .15 |
| 13 | 10 | 4.85 | .62 | 10 | 5.38 | .55 | 10 | 5.98 | .55 | 10 | 7.33 | .55 | 10 | 8.77 | .27 |
| 14 | 10 | 5.00 | .70 | 10 | 5.61 | .83 | 10 | 6.25 | .70 | 10 | 8.60 | .54 | 10 | 9.23 | .28 |
| 15 | 11 | 3.45 | .61 | 11 | 5.00 | .73 | 11 | 5.95 | .57 | 11 | 8.14 | .38 | 11 | 8.95 | .27 |
| 16 | 9 | 4.30 | 1.05 | 10 | 5.38 | .95 | 10 | 5.83 | .94 | 10 | 8.05 | .49 | 10 | 8.99 | .42 |
| 17 | 11 | 4.09 | .94 | 13 | 4.17 | .80 | 14 | 4.98 | .71 | 14 | 7.46 | .60 | 14 | 9.16 | .23 |
| 18 | 10 | 3.90 | .75 | 10 | 5.80 | .61 | 10 | 6.45 | .53 | 10 | 7.60 | .45 | 10 | 8.80 | .28 |
| 19 | 6 | 4.17 | 1.30 | 7 | 4.21 | 1.17 | 7 | 5.21 | 1.22 | 9 | 5.48 | .86 | 11 | 6.23 | .76 |
| 20 | 8 | 3.00 | .71 | 9 | 5.00 | .69 | 11 | 5.73 | .75 | 11 | 6.91 | .73 | 11 | 8.00 | .54 |
| 21 | 12 | 3.25 | .56 | 12 | 3.83 | .59 | 13 | 4.62 | .69 | 13 | 6.65 | .59 | 13 | 8.07 | .47 |
| 22 | 10 | 3.65 | .70 | 10 | 4.85 | .76 | 10 | 6.45 | .56 | 11 | 8.16 | .44 | 11 | 8.98 | .35 |
| 23 | 11 | 3.73 | .55 | 11 | 4.51 | .62 | 13 | 5.42 | .66 | 14 | 6.86 | .54 | 14 | 8.55 | .33 |
| 24 | 9 | 3.78 | .55 | 9 | 5.39 | .63 | 11 | 6.55 | .73 | 11 | 7.91 | .46 | 11 | 8.91 | .44 |
| 25 | 11 | 4.64 | .85 | 11 | 6.00 | .77 | 11 | 6.64 | .72 | 11 | 7.95 | .52 | 11 | 9.09 | .41 |
| 26 | 8 | 4.94 | .95 | 9 | 5.28 | .98 | 9 | 6.04 | .91 | 9 | 7.13 | .87 | 9 | 8.72 | .56 |
| 27 | 5 | 4.40 | 1.44 | 7 | 4.29 | 1.19 | 7 | 6.07 | 1.23 | 9 | 6.78 | .95 | 10 | 8.45 | .68 |
| 28 | 11 | 4.95 | .91 | 11 | 5.68 | .80 | 12 | 6.88 | .63 | 12 | 8.22 | .54 | 12 | 9.41 | .28 |
| 29 | 8 | 4.13 | 1.13 | 10 | 4.95 | .87 | 11 | 6.00 | .87 | 11 | 7.50 | .61 | 11 | 9.55 | .25 |
| 30 | 9 | 4.11 | .82 | 10 | 5.20 | .65 | 12 | 5.83 | .71 | 12 | 7.83 | .70 | 12 | 9.42 | .24 |
| 31 | 9 | 3.44 | .44 | 10 | 4.60 | .48 | 10 | 6.25 | .45 | 10 | 8.20 | .47 | 10 | 9.60 | .22 |
| 32 | 8 | 3.56 | 1.17 | 9 | 4.67 | 1.03 | 10 | 6.50 | .90 | 10 | 7.80 | .68 | 10 | 9.50 | .34 |
| 33 | 10 | 5.85 | .80 | 10 | 6.70 | .81 | 10 | 7.50 | .67 | 10 | 9.10 | .48 | 10 | 9.95 | .05 |
| 34 | 8 | 3.75 | .65 | 10 | 5.25 | .27 | 10 | 6.80 | .61 | 10 | 8.95 | .40 | 10 | 9.65 | .18 |
| 35 | 12 | 3.83 | .65 | 13 | 4.85 | .67 | 14 | 5.82 | .56 | 15 | 7.13 | .51 | 15 | 9.46 | .18 |
| 36 | 14 | 5.50 | .86 | 17 | 6.85 | .63 | 19 | 7.42 | .71 | 19 | 8.53 | .47 | 19 | 9.79 | .12 |
| 37 | 11 | 3.18 | .68 | 11 | 4.47 | .61 | 11 | 5.32 | .62 | 11 | 6.16 | .52 | 11 | 8.14 | .31 |
| 38 | 9 | 4.28 | .80 | 9 | 5.40 | .85 | 10 | 6.68 | .77 | 10 | 7.53 | .75 | 10 | 8.50 | .63 |
| 39 | 10 | 3.75 | .40 | 10 | 6.05 | .45 | 10 | 6.53 | .53 | 10 | 8.18 | .38 | 10 | 9.30 | .29 |
| 40 | 10 | 3.10 | .74 | 10 | 5.60 | .75 | 10 | 6.50 | .48 | 10 | 8.35 | .26 | 10 | 9.65 | .15 |
| 41 | 10 | 5.10 | .72 | 10 | 6.60 | .73 | 10 | 7.90 | .49 | 10 | 9.00 | .50 | 10 | 10.00 | .00 |
| 42 | 8 | 4.75 | 1.22 | 8 | 5.75 | 1.15 | 9 | 6.89 | 1.05 | 10 | 7.45 | .92 | 10 | 8.70 | .88 |
| 43 | 8 | 4.75 | 1.06 | 9 | 6.06 | .66 | 10 | 7.15 | .79 | 10 | 8.40 | .76 | 10 | 9.80 | .13 |
| 44 | 9 | 4.56 | .88 | 9 | 6.61 | .99 | 10 | 8.18 | .66 | 10 | 9.18 | .46 | 10 | 9.80 | .20 |
| 45 | 7 | 4.00 | .76 | 7 | 4.14 | .70 | 9 | 4.17 | .72 | 9 | 6.83 | .83 | 10 | 7.73 | .72 |
| 46 | 6 | 1.13 | .38 | 8 | 2.31 | .39 | 8 | 4.13 | .82 | 9 | 6.42 | .79 | 10 | 8.25 | .55 |

| Base Health State | TTO Positive Scores | | | | | | | | | | | | | | |
|-------------------|---------------------|----------|------------|---------|----------|------------|-------|----------|------------|---------|----------|------------|----------|----------|------------|
| | A (E - -) | | | B (E -) | | | C (E) | | | D (E +) | | | E (E ++) | | |
| | N | Mean TTO | Std. Error | N | Mean TTO | Std. Error | N | Mean TTO | Std. Error | N | Mean TTO | Std. Error | N | Mean TTO | Std. Error |
| 47 | 10 | 2.83 | .57 | 10 | 4.08 | .60 | 11 | 5.73 | .64 | 11 | 7.84 | .31 | 11 | 9.20 | .32 |
| 48 | 9 | 4.06 | .66 | 11 | 5.07 | .74 | 11 | 5.77 | .69 | 11 | 8.23 | .44 | 11 | 9.59 | .15 |
| 49 | 10 | 4.53 | .69 | 10 | 6.45 | .51 | 10 | 7.55 | .41 | 10 | 8.23 | .29 | 10 | 9.95 | .05 |
| 50 | 9 | 2.31 | .69 | 9 | 3.31 | .75 | 10 | 5.10 | .66 | 10 | 7.40 | .70 | 10 | 9.28 | .25 |
| 51 | 7 | 4.79 | 1.02 | 7 | 6.07 | .85 | 7 | 7.70 | .85 | 7 | 8.32 | .73 | 7 | 9.21 | .50 |
| 52 | 11 | 3.41 | .54 | 11 | 4.68 | .49 | 11 | 6.59 | .39 | 11 | 9.09 | .25 | 11 | 9.86 | .10 |
| 53 | 9 | 5.47 | 1.07 | 9 | 6.08 | .98 | 10 | 6.95 | .83 | 10 | 8.80 | .39 | 10 | 9.45 | .24 |
| 54 | 6 | 2.83 | 1.01 | 7 | 4.29 | .79 | 10 | 5.75 | .57 | 10 | 7.00 | .69 | 10 | 9.30 | .30 |
| 55 | 5 | 2.30 | .80 | 6 | 4.21 | .72 | 7 | 6.71 | .81 | 8 | 8.50 | .60 | 8 | 9.50 | .38 |
| 56 | 6 | 3.00 | .83 | 7 | 5.29 | .52 | 7 | 6.11 | .49 | 8 | 7.78 | .57 | 8 | 9.13 | .40 |
| 57 | 7 | 2.07 | .74 | 8 | 4.06 | 1.14 | 9 | 5.02 | .59 | 10 | 7.55 | .57 | 10 | 8.50 | .47 |
| 58 | 11 | 3.11 | .54 | 11 | 4.52 | .60 | 11 | 6.84 | .61 | 11 | 7.93 | .39 | 11 | 8.61 | .38 |
| 59 | 6 | 4.58 | 1.04 | 6 | 5.97 | .98 | 6 | 7.33 | .76 | 6 | 9.08 | .64 | 6 | 9.83 | .17 |
| Total | 536 | 3.97 | .10 | 579 | 5.10 | .10 | 613 | 6.21 | .09 | 628 | 7.77 | .08 | 633 | 9.07 | .05 |

AQoL-8D TTO Results for MA Health States: Worse than Death

| Base Health State | TTO worse than death | | | | | | | | | | | | | | |
|-------------------|----------------------|----------|------------|---------|----------|------------|-------|----------|------------|---------|----------|------------|----------|----------|------------|
| | A (E - -) | | | B (E -) | | | C (E) | | | D (E +) | | | E (E ++) | | |
| | N | Mean TTO | Std. Error | N | Mean TTO | Std. Error | N | Mean TTO | Std. Error | N | Mean TTO | Std. Error | N | Mean TTO | Std. Error |
| 1 | 3 | 3.08 | 1.08 | 1 | 3.50 | . | | . | . | | . | . | | . | . |
| 2 | | | | | | | | | | | | | | | |
| 3 | 2 | 2.50 | 2.50 | | . | . | | . | . | | . | . | | . | . |
| 4 | 1 | .00 | . | 1 | .04 | . | 1 | .05 | . | | . | . | | . | . |
| 5 | 1 | 2.00 | . | 1 | 5.00 | . | | . | . | | . | . | | . | . |
| 6 | 5 | 2.00 | .63 | 2 | 3.50 | 1.50 | 2 | 4.50 | 1.50 | | . | . | | . | . |
| 7 | 1 | 6.00 | . | 1 | 8.00 | . | | . | . | | . | . | | . | . |
| 8 | 2 | 2.50 | 1.50 | | . | . | | . | . | | . | . | | . | . |
| 9 | 4 | 4.13 | 1.59 | | . | . | | . | . | | . | . | | . | . |
| 10 | 1 | 7.00 | . | | . | . | | . | . | | . | . | | . | . |
| 11 | 1 | 2.00 | . | | . | . | | . | . | | . | . | | . | . |
| 12 | 1 | 2.00 | . | 1 | 2.00 | . | | . | . | | . | . | | . | . |
| 13 | | . | . | | . | . | | . | . | | . | . | | . | . |
| 14 | | . | . | | . | . | | . | . | | . | . | | . | . |
| 15 | | . | . | | . | . | | . | . | | . | . | | . | . |
| 16 | 1 | 4.00 | . | | . | . | | . | . | | . | . | | . | . |
| 17 | 3 | 5.00 | 1.53 | 1 | 2.50 | . | | . | . | | . | . | | . | . |
| 18 | | . | . | | . | . | | . | . | | . | . | | . | . |
| 19 | 5 | 3.00 | .55 | 4 | 3.38 | .90 | 4 | 4.50 | .87 | 2 | 6.50 | .50 | | . | . |
| 20 | 3 | 4.33 | 1.45 | 2 | 2.00 | 1.00 | | . | . | | . | . | | . | . |
| 21 | 1 | 5.00 | . | 1 | 1.00 | . | | . | . | | . | . | | . | . |
| 22 | 1 | 2.00 | . | 1 | 3.00 | . | 1 | 4.00 | . | | . | . | | . | . |
| 23 | 3 | 2.73 | 1.27 | 3 | 3.67 | .67 | 1 | 6.00 | . | | . | . | | . | . |
| 24 | 2 | 8.50 | .50 | 2 | 9.00 | .00 | | . | . | | . | . | | . | . |
| 25 | 1 | 3.00 | . | 1 | 3.00 | . | 1 | 3.00 | . | 1 | 3.00 | . | 1 | 4.00 | . |
| 26 | 1 | 2.00 | . | | . | . | | . | . | | . | . | | . | . |
| 27 | 5 | 3.10 | 1.29 | 3 | 3.00 | .58 | 3 | 3.67 | .44 | 1 | 8.00 | . | | . | . |
| 28 | 2 | 7.50 | 1.50 | 2 | 7.50 | 1.50 | 1 | 9.00 | . | 1 | 9.00 | . | 1 | 10.00 | . |
| 29 | 3 | 4.00 | 2.08 | 1 | 8.50 | . | | . | . | | . | . | | . | . |
| 30 | 3 | 2.36 | 1.84 | 2 | 4.25 | 3.75 | | . | . | | . | . | | . | . |
| 31 | 1 | 3.00 | . | | . | . | | . | . | | . | . | | . | . |
| 32 | 2 | 1.75 | 1.25 | 1 | .67 | . | | . | . | | . | . | | . | . |
| 33 | | . | . | | . | . | | . | . | | . | . | | . | . |
| 34 | 2 | 3.50 | .50 | | . | . | | . | . | | . | . | | . | . |
| 35 | 3 | 3.83 | .73 | 2 | 3.50 | .50 | 1 | 6.00 | . | | . | . | | . | . |
| 36 | 4 | 1.88 | .85 | 2 | 1.00 | .00 | | . | . | | . | . | | . | . |
| 37 | | . | . | | . | . | | . | . | | . | . | | . | . |
| 38 | 1 | 5.00 | . | 1 | 8.00 | . | | . | . | | . | . | | . | . |
| 39 | | . | . | | . | . | | . | . | | . | . | | . | . |
| 40 | | . | . | | . | . | | . | . | | . | . | | . | . |
| 41 | | . | . | | . | . | | . | . | | . | . | | . | . |
| 42 | 3 | 3.33 | .88 | 3 | 4.00 | .58 | 2 | 4.00 | 1.00 | 1 | 4.00 | . | 1 | 9.50 | . |
| 43 | 2 | 4.25 | 1.75 | 1 | 6.00 | . | | . | . | | . | . | | . | . |
| 44 | 1 | 5.00 | . | 1 | 2.00 | . | | . | . | | . | . | | . | . |
| 45 | 3 | 4.83 | 2.49 | 3 | 4.97 | 2.62 | 1 | 1.00 | . | 1 | 3.00 | . | | . | . |
| 46 | 4 | 4.75 | 1.25 | 2 | 3.50 | 1.50 | 2 | 4.50 | 2.50 | 1 | 9.00 | . | | . | . |
| 47 | 1 | 5.00 | . | 1 | 6.00 | . | | . | . | | . | . | | . | . |
| 48 | 2 | 8.00 | 1.00 | | . | . | | . | . | | . | . | | . | . |
| 49 | | . | . | | . | . | | . | . | | . | . | | . | . |
| 50 | 1 | 2.00 | . | 1 | 5.00 | . | | . | . | | . | . | | . | . |
| 51 | | . | . | | . | . | | . | . | | . | . | | . | . |

| Base Health State | TTO worse than death | | | | | | | | | | | | | | |
|-------------------|----------------------|-------------|------------|-----------|-------------|------------|-----------|-------------|------------|----------|-------------|------------|----------|-------------|-------------|
| | A (E - -) | | | B (E -) | | | C (E) | | | D (E +) | | | E (E ++) | | |
| | N | Mean TTO | Std. Error | N | Mean TTO | Std. Error | N | Mean TTO | Std. Error | N | Mean TTO | Std. Error | N | Mean TTO | Std. Error |
| 52 | | . | . | | . | . | | . | . | | . | . | | . | . |
| 53 | 1 | 3.00 | . | 1 | 4.00 | . | | . | . | | . | . | | . | . |
| 54 | 3 | 3.33 | 1.20 | 3 | 3.67 | 1.76 | | . | . | | . | . | | . | . |
| 55 | 3 | 4.00 | 1.00 | 2 | 3.50 | 1.50 | 1 | 5.00 | . | | . | . | | . | . |
| 56 | 2 | 4.00 | 1.00 | 1 | 6.00 | . | 1 | 7.00 | . | | . | . | | . | . |
| 57 | 3 | 4.33 | 2.40 | 2 | 3.50 | 1.50 | 1 | 3.00 | . | | . | . | | . | . |
| 58 | | . | . | | . | . | | . | . | | . | . | | . | . |
| 59 | | . | . | | . | . | | . | . | | . | . | | . | . |
| Total | 98 | 3.69 | .24 | 57 | 4.00 | .33 | 23 | 4.31 | .44 | 8 | 6.13 | .90 | 3 | 7.83 | 1.92 |