



A comparison of individual and social time trade-off values for health states in the general population

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Abstract

This study aimed to compare directly elicited individual time trade-off (TTO) values in a general population sample with the social values derived using the UK EQ-5D index tariff. In the Stockholm County 1998 postal Public Health Survey ($n = 4950$, 20–88 years), the EQ-5D self-classifier, a TTO and a rating scale (RS) question were included ($n = 2549$ for all three questions).

The mean TTO (EQ-5D) value was 0.943 (0.890) in the youngest age-group and 0.699 (0.733) in the oldest age-group. The difference between TTO and EQ-5D values was greater in more severe health status groups. The same equation as for the UK EQ-5D index tariff was estimated for TTO and RS and resulted in significant and consistent coefficients for nearly all dimensions. The coefficients for moderate problems were closer to the EQ-5D index tariff than the coefficients for severe problems. Age was also significant after controlling for the EQ-5D dimensions ($p < 0.05$).

The results suggest that individual and social TTO values differ systematically and that the difference is greater the more severe the health status is. The social EQ-5D index tariff may also underestimate the severity in health status at older ages; age appears to correlate with additional health problems not captured by the EQ-5D classification.

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1. Introduction

Health outcome measures that combine length of life and health status into a single measure are useful in health planning and economic evaluation [1–4]. Quality-adjusted life years (QALYs) is such a mea-

sure, constructed by weighing the number of life years in a health state with the corresponding health state score reflecting health-related quality of life (HRQoL) on a scale between 0 (dead) and 1 (full health) [1,3,5]. There are three main methods of eliciting these health state valuations: the rating scale (RS); the time trade-off (TTO); the standard gamble (SG) method [1,3,5].

Apart from choosing the most appropriate method, it is also controversial whose values should be applied

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to specific health states [2,6,7]. There are two main approaches. The first is to base the valuations on individuals who are actually in the health state, and this approach is sometimes referred to as patient values or individual values. The second approach is to base the valuations on a general population sample to which the health states are described, and this approach is sometimes referred to as community or social values. For the use of patient or individual values, it can be argued that those individuals who experience the health state are best informed about the specific health state and they are also the ones who are directly affected by an intervention. Hence, they should be the ones to value the health state. This argument is in conformity with the individualistic foundation of welfare economics that consider individuals as the best judges of their own welfare and that QALYs should be based on individualistic preferences. On the other hand, in support of the use of community or social values it has been argued that health policies and interventions affect us all, as we are all tax payers and potential patients. Hence, social preferences are more appropriate for use in economic evaluation in the decision making process aiming to allocate scarce resources. An additional argument for using community or social values is the so-called “happy slave” occurrence, i.e. it is argued that persons experiencing a health state tend to adapt to their situation. [2]

The second approach has been taken when constructing the so-called social tariff for EQ-5D health states based on TTO valuations from the UK general population [8,9]. The EQ-5D is a generic health-related quality of life measure [10,11].

Irrespective of whether individual or social values are considered most appropriate it is important to systematically study to what extent they differ [2]. Economic evaluation will be affected by whose preferences are used since the size of the effect of interventions may rely on the values used and could result in an under- or overestimation depending on perspective.

It has been shown that for health states classified by the EQ-5D, values derived in patient groups differ from the social UK EQ-5D index tariff [12,13]. A study by Zethraeus and Johannesson found that patient TTO values were similar to social UK EQ-5D index values for relatively mild health states but that the patient TTO values were higher for more severe health states [12].

In a study by Polsky et al., the patient visual analogue scale (VAS) scores were higher for all but the mildest health states compared to the UK EQ-5D index values [13]. The authors of these two studies point out the relatively small sample sizes in their studies and stress the importance of further research comparing patient (individual) values and social values for health states.

In the 1998 Public Health Survey in Stockholm County (sample size 4950), the EQ-5D self-classifier, a TTO question, and a RS question were included. The purpose of the present study was to compare the directly elicited individual TTO values with the TTO values derived using the social UK EQ-5D index tariff for the same health states. In addition, we also included the directly measured RS scores (individual scores), as an additional check of whether the observed differences were due to the unconventional TTO question used (TTO questions are typically administered in face-to-face interviews rather than in self-administered questionnaires as in this study). We carried out several comparisons and tests—whether individual and social values differed by age and sex in the general population, and whether individual and social values differed for different severity of health status. As part of this comparison, we also estimated a regression function to interpolate individual TTO values and RS scores, which were compared to the values derived using the social UK EQ-5D index tariff.

2. Methods

2.1. Study sample

We used data from a cross-sectional study (the 1998 Public Health Survey) based on a self-administered postal questionnaire to a representative sample ($n=4950$, aged 20–88 years) of the Stockholm County population. The EQ-5D classifier, a time trade-off question and a rating scale question were included in the survey and other questions were asked on health, long-standing illness, housing, leisure and social relations, political activity, safety, education, employment and work environment, etc. Longstanding illness was assessed from the survey by answers to the question: “Do you suffer from any long-term illness, after-effects from an accident, disability or other

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