

Testing two alternative TTO methods for valuation of EQ-5D-Y health states by trading life years in adulthood

Zhihao Yang¹, Nancy Devlin², Kim Rand³, Nan Luo⁴

1. Department of Health Services Management, Guizhou Medical University, China
2. Melbourne School of Population and Global Health, University of Melbourne, Australia
3. Health Services Research Centre, Akershus University Hospital, Norway
4. Saw Swee Hock School of Public Health, National University of Singapore, Singapore

Abstract

Introduction: One drawback of the current cTTO method for the Y valuation is that it works by asking respondents to consider shortening a 10-years-old child's life for better health. Although it is hypothetical, the cTTO task could be upsetting and abhorrent to some respondents. Also, there is concern that adult respondents are unwilling to trade child life years, and consequently many studies reported cTTO values of Y valuation studies higher than the cTTO values of corresponding adult states. In order to overcome this potential issue, we conceptualized, and pilot tested two alternative TTO variants named the Parent TTO (PTTO) and lag-time TTO (LTTO). Both methods ask respondents to trade adult life years. We hypothesized that they have higher acceptability and would generate lower values compared to cTTO.

Method: We collected PTTO and LTTO data for the 10 health states included in the EQ-5D-Y valuation protocol from a general population sample in China. The data collection was piggybacked on the China EQ-5D-Y valuation study, using three interviewers with experience using EQ-VT (two interviewers participated in the China Y study, one interviewer participated in two methodological study). For comparison, the cTTO data, including cTTO values, feedback questions and time etc. were drawn from the China EQ-5D-Y study. We compared the methods in terms of acceptability (using three feedback questions: easy to understand, easy to tell the difference, easy to make the decision), feasibility (time to complete the practice task, time to value the 10 states) and characteristics of TTO values (mean and data distributions).

Results: In total, 304 participants were included (cTTO: 100; LTTO: 102; PTTO: 102) in this study. On a 5-point Likert scale, the mean score of the 'easy to understand' question was 1.18 (SD: 0.58), 1.45 (SD: 0.91) and 1.65 (SD: 1.02) for cTTO, LTTO and PTTO respectively. The mean score of the 'easy to differentiate' question was 1.45 (SD: 0.91), 1.94 (SD: 1.08) and 1.86 (SD: 1.24) and the mean score of the 'difficult to decide' question was 3.61 (SD: 1.29), 2.97 (SD: 1.33) and 3.02 (SD: 1.50) respectively. The mean (SD) time spent on the wheelchair example was 276.34 (147.51), 350.33 (140.28) and 454.44 (139.92) seconds for cTTO, LTTO and PTTO, respectively. The mean (SD) time spent on valuing each of the 10 states was 102.97 (29.48), 134.66 (49.69), 141.72 (47.07). The mean (SD) TTO values of all 10 states were 0.463 (0.494), 0.387 (0.555) and 0.123 (0.710). All tests were significantly different when using cTTO method as references, except that the mean value comparison between cTTO and LTTO. LTTO and PTTO showed clear clusterings at 0 and -1 respectively; PTTO had more values on the negative value range.

Discussion: By designing and testing these two alternative TTO methods to trade-off life adult years, we found participants did not find the TTO tasks more acceptable and feasible, but these two methods do produce values that are more similar to the EQ-5D-5L values. We also found the TTO values may be affected by the parental status and age of the respondents suggesting that researchers to pay attention to the sample representativeness when conducting an EQ-5D-Y valuation study.