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Preference-Based Assessments

Comparisons of Preferences Toward EQ-5D-Y-3L Health States Between Adult Own and Child Perspectives

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ABSTRACT

Objectives: The international valuation protocol for EQ-5D-Y-3L recommends elicitation of utilities using adults' preference for a hypothetical 10-year-old child. Published studies have reported preference difference in adults when valuing for a child and valuing for themselves. This study aimed to obtain EQ-5D-Y-3L preferences in Hong Kong and understand the preference difference between the adult own perspective and the child perspective.

Methods: We recruited 1000 and 200 adults in Hong Kong to value EQ-5D-Y-3L health states using discrete choice experiment and composite time trade-off (cTTO), respectively. Discrete choice experiment respondents were randomized to complete tasks from either adult own perspective or child perspective. cTTO respondents completed valuation from the child perspective. Relative attribute importance scores were compared between perspectives. Utility values were obtained by anchoring on the worst health state for both perspectives.

Results: Both perspectives had similar relative attribute importance scores, rankings of dimensions, rescaled coefficients, and elicited values. Rank order of 5 dimensions, from highest to lowest importance, was "having pain or discomfort," "doing usual activities," "feeling worried, sad, or unhappy," "mobility," and "looking after myself" for both perspectives. The most important and least important dimensions were consistent with published EQ-5D-Y-3L value sets.

Conclusions: This study revealed no remarkable difference in the relative preference for EQ-5D-Y-3L health states between the adult own and child perspectives in Hong Kong, offering insights to the development of the EQ-5D-Y-5L valuation protocol. Future research may explore the effect of perspectives on preferences elicited by cTTO in Asia.

Keywords: adolescents, children, EQ-5D-Y-3L, health-related quality of life, health state valuation.

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Highlights

- To our knowledge, this is the first study in Asia to compare adults' preferences for EQ-5D-Y-3L health states from their own perspective with that of a child.
- In a sample of Hong Kong adults, there was no difference in relative preferences for EQ-5D-Y-3L health states between adult own and child perspectives.
- Findings of this study may inform the development of the EQ-5D-Y-5L valuation protocol for Asia and beyond.

Introduction

The EQ-5D-Y-3L is a child-friendly, generic, preference-based instrument to measure health-related quality of life in children and adolescents aged 8 to 15 years. The EQ-5D-Y-3L was adapted from the EQ-5D instrument, using age-appropriate wording and examples for young respondents.[1] Evidence from multiple systematic reviews have demonstrated the feasibility, validity, and reliability of the EQ-5D-Y-3L.[2-5] The EQ-5D-Y-3L had the largest amount of evidence of good psychometric performance compared with other preference-based measures, including Child Health Utility and Health Utilities Index Mark 2 and Mark 3.[3]

An international valuation protocol for the EQ-5D-Y-3L has been published by the EuroQol Group to value the EQ-5D-Y-3L health states using 2 methods: discrete choice experiments (DCE) and composite time trade-off (cTTO).[6,7] The EQ-5D-Y-3L value set estimation process is a 2-step approach: DCE responses are first modeled to generate latent scale values, then the DCE-derived values are anchored into the full-health-death scale using cTTO values. In both the DCE and cTTO tasks, adult respondents from the general population are invited to reflect health preferences for a hypothetical 10-year-old child under the framing "Considering your views about a 10-year-old child, what do you prefer?" EQ-5D-Y-3L value sets have been estimated following the protocol in several European[8-13] and Asian[14-16] countries.

Valuation of EQ-5D-Y-3L poses different challenges compared with EQ-5D valuations, particularly on the use of children/adolescents in valuation.[17-19] First, children/adolescents might lack cognitive capability and life experience to understand valuation tasks and health states.[18,19] Second, there are ethical concerns on consideration of death and trading-off life-years by children/adolescents.[18,19] Considering feasibility and ethics, the protocol recommends the use of adult respondents instead of children/adolescents themselves.[6] Nevertheless, this approach has its own limitations because adult respondents have reported struggles in performing the valuation tasks. Adult respondents from qualitative studies conducted in the United Kingdom and Sweden reported

difficulty and reluctance to choose between unfamiliar health states in DCE tasks and trade-off life-years for a child in TTO tasks.[20,21]

Extensive methodological studies have reported the impact of perspectives on EQ-5D-Y-3L valuations in European countries[22-31] but less so in Asia. Most of these studies compared the adult own perspective, in which respondents imagine themselves in the EQ-5D-Y-3L health states and indicate their preferences, and the hypothetical 10-year-old child perspective, in which respondents imagine a 10-year-old child in those health states and state their preferences (see Appendix Table 1 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2025.06.008). Although these studies were conducted in European countries, there is limited evidence from Asian populations, in which cultural differences may influence health state preferences, as suggested by the smaller scale range of value sets in Asian countries.[14-16] Our study addresses this gap by investigating the effect of perspectives in Hong Kong, a region with Asian cultural context.

Therefore, the objective of this study is to obtain preferences toward EQ-5D-Y-3L health states in the Hong Kong adult general population, and to understand the differences in preferences between the adult own perspective and the hypothetical 10-year-old child perspective.

Methods

Study Sample

Data were collected from adult members of the Hong Kong general population aged 18 to 74 years, with quotas on age and sex to generate a representative sample. Participants were recruited through convenience sampling using passive recruitment methods, with study posters placed in public spaces to inform and invite interested individuals. Based on the sample size recommendations by the international valuation protocol, a total of 1000 and 200 individuals were recruited for DCE and cTTO, respectively.[6] The 1000 DCE respondents were randomly assigned into 2 groups of 500 respondents. Data for the DCE were collected in 2 phases: from 9 August to 30 September 2019 and 16 April to 12 October 2021. Data for the cTTO were collected from 16 April to 27 September 2021. Both methods were carried out in the form of online face-to-face interviewer administration through the EuroQol Portable Valuation Technology platform. All respondents in the DCE and cTTO surveys were asked to complete EQ-5D-Y-3L, EQ Visual Analog Scale (EQ VAS), and questions on demographics characteristics and health conditions. Respondents received a cash voucher worth HKD 50 upon survey completion for their time. The full survey is included in Appendix File 1 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2025.06.008.

EQ-5D-Y-3L Instrument

The EQ-5D-Y-3L descriptive system consists of 5 dimensions: "mobility" (MO), "looking after myself" (SC), "doing usual activities" (UA), "having pain or discomfort" (PD), and "feeling worried, sad, or unhappy" (WSU). Each dimension has a response scale of 3 severity levels (1 = "no problems," 2 = "some problems," and 3 = "a lot of problems") and therefore $3^5 = 243$ possible health states are represented using 5-digit numbers composed of the 5 response levels. In particular, the health states 11111 and 33333 represent the full health and the worst health, respectively. The EQ VAS records the respondent's self-rated health. The scale is numbered from 0 to 100, with the endpoints 0 labeled "the worst health you can imagine" and 100 labeled "the best health you can imagine." Psychometric properties of EQ-5D-Y-3L have been examined among pediatric patients in Hong Kong.[32,33]

DCE Interview

Respondents who participated in the DCE interview were randomly assigned to 1 of the 2 study arms: adult perspective and child perspective.[6,23] Respondents valuing from the adult perspective were asked the question "Which health state do you prefer?" whereas respondents valuing from the child perspective were asked the question "Considering your view for a 10-year-old child, which health state do you prefer?" Respondents in both framing perspectives were given health states described using the EQ-5D-Y-3L wording. The DCE design, following the valuation protocol, is a D-efficient design with 2 overlapping dimensions for each choice pair. It consisted of 10 blocks of 15 randomly ordered choice pairs.[6] Each respondent made decisions on 15 choice pairs from one randomly selected block. An example of the DCE task for both perspectives is presented in Figure 1.

cTTO Interview

Respondents in the cTTO interview were asked to complete cTTO tasks for a hypothetical 10-year-old child. The respondents were first demonstrated with 2 wheelchair examples involving "Better than dead" and "Worse than dead" scenarios. These examples were included for the respondents to grasp the meaning of full health and differentiate between health states, which ensured data quality. Respondents practiced with 3 health states before the evaluation. One block of the 10 randomly ordered health states (11112 to 33333) from the protocol was used for the cTTO tasks.[6] The cTTO procedures were described elsewhere.[34] Afterward, they received a feedback module to review their answers. An interviewer was involved in the feedback process for better understanding of the respondents' opinions.

Quality Control

In the DCE task, a fixed extra pair (11122 vs 22233), in which one (11122) logically dominated the other (22233), was added to assess the attentiveness of the respondents. A low proportion of respondents choosing the dominating alternative indicates a poor data quality.[35] The level sum score (LSS) of a health state is the sum of the severity levels of the 5 dimensions. Lower LSS values are generally preferred. Logical consistency was shown by an increasing trend in choosing favorable health states as LSS varied. The proportions of respondents choosing health state A over B based on LSS difference (A minus B) were shown. P-trend tested the decreasing trend in these proportions as the LSS difference increased from -3 to $+3$.

The quality control process for the cTTO interview consisted of a set of quality criteria to identify response with poor quality and continuous feedback to improve interviewers' performance.[36] The cTTO interviewers were given a 1-day training workshop to practice interviews before actual data collection. During cTTO data collection, the interviewers were also given continuous feedback for improvement. The training workshop and continuous feedback were provided by the authors Z.Y. and F.P.

Statistical Analysis

Descriptive statistics were used to summarize respondents' characteristics, including age, gender, marital status, education level, employment status, responsibility for any children aged under 18 or any person aged over 18, and experience with serious illness. Self-reported health status, life and health satisfaction scales, EQ-5D-Y-3L, and EQ VAS were also measured. Proportions and numbers were used to represent categorical variables, whereas mean and standard deviation (SD) were used for continuous variables.

Figure 1. Example of the discrete choice experiment task for each perspective.

Observed probability of choosing health state A over health state B in the DCE was reported for each choice pair by perspectives and compared using chi-square tests. Observed cTTO values were summarized by mean, SD, and standard error (SE). The distribution of cTTO values was also modeled using Tobit model to adjust for censoring at −1, with mean and SE reported.

Latent DCE values were estimated using mixed logit models on the DCE data. As level 1 was chosen to be the base level, there were 2 dummy variables, level 2 and level 3, for each dimension, which gave a total of 10 attributes to uniquely represent the health states. Following the random utility model framework, the observable component of the utility is given by

$$V_j = \beta_1 \mathrm{MO2} + \beta_2 \mathrm{MO3} + \beta_3 \mathrm{SC2} + \beta_4 \mathrm{SC3} + \beta_5 \mathrm{UA2} + \beta_6 \mathrm{UA3} + \beta_7 \mathrm{PD2} + \beta_8 \mathrm{PD3} + \beta_9 \mathrm{WSU2} + \beta_{10} \mathrm{WSU3}$$

The coefficients were modeled as random and normally distributed. The estimated coefficients represent the importance and equivalently the undesirability of the level-2/level-3 attributes (ie, the more important an attribute is, the more undesirable it is). The difference in between adult and child perspectives was compared using the relative attribute importance (RAI) scores, which controls for the scale and preference heterogeneity.[26,37] The RAI score for a dimension is the normalized importance defined as ratio of estimated coefficients

$$\mathrm{RAI}_X = \frac{\beta_X}{\beta_{\mathrm{least}}}$$

in which the numerator β_X is the coefficient of the level-3 attribute for the dimension and the dominator β_{least} is the coefficient of the level-3 attribute with least importance. The RAI score of the least important dimension is normalized to 1, and the RAI scores are at least 1 for other dimensions. After the normalization, the RAI scores for the 5 dimensions were compared between perspectives. Specifically, the difference in preferences for a dimension X is assessed by the difference

$$\mathrm{Difference} = \mathrm{RAI}_{X,A} - \mathrm{RAI}_{X,C} = \frac{\beta_{X,A}}{\beta_{\mathrm{least},A}} - \frac{\beta_{X,C}}{\beta_{\mathrm{least},C}}$$

Here, $\mathrm{RAI}_{X,A}$ and $\mathrm{RAI}_{X,C}$ are the respective RAI scores for dimension X from adult and child perspectives, $\beta_{X,A}$ is the coefficient for the level-3 term of dimension X in the adult perspective, $\beta_{\mathrm{least},A}$ is the coefficient for the level-3 term of the least important dimension in the adult perspective, and $\beta_{X,C}$ and $\beta_{\mathrm{least},C}$ are defined similarly for child perspective. The RAI approach can control for the scale heterogeneity between the 2 perspectives.[26] Because the RAI scores and their differences are nonlinear combinations of the estimated coefficients, the delta method was used to estimate the standard errors.[26]

Difference in between perspectives was also assessed using pooled mixed logit models.[26,38] Samples from both perspectives were included in 1 single mixed logit model, with coefficients for the 10 main effect attribution levels and 10 attribute levels interacting with the adult/child perspective variable.[26,39] The main effects were modeled as random and normally

Table 1. Characteristics of DCE and composite time trade-off (cTTO) respondents.

Characteristics	DCE			cTTO
	Total (*N* = 1000)	Adult perspective (*N* = 500)	Child perspective (*N* = 500)	Total (*N* = 200)
Age, mean (SD)	45.1 (15.3)	45.1 (15.1)	45.1 (15.6)	47.4 (16.4)
Age groups, % (*n*)				
18-24	11.2% (112)	10.8% (54)	11.6% (58)	11.5% (23)
25-34	17.3% (173)	17.2% (86)	17.4% (87)	12.5% (25)
35-44	19.5% (195)	19.4% (97)	19.6% (98)	20.0% (40)
45-54	19.3% (193)	20.6% (103)	18.0% (90)	17.5% (35)
55-64	20.3% (203)	20.8% (104)	19.8% (99)	16.0% (32)
65 or above	12.4% (124)	11.2% (56)	13.6% (68)	22.5% (45)
Gender, % (*n*)				
Male	44.9% (449)	45.2% (226)	44.6% (223)	44.5% (89)
Female	55.1% (551)	54.8% (274)	55.4% (277)	55.5% (111)
Marital status, % (*n*)				
Single	37.2% (372)	36.4% (182)	38.0% (190)	34.5% (69)
Married/Partner	55.9% (559)	56.6% (283)	55.2% (276)	61.0% (122)
Separated/divorced	4.1% (41)	4.0% (20)	4.2% (21)	2.5% (5)
Widowed	2.4% (24)	2.8% (14)	2.0% (10)	2.0% (4)
Not known	0.4% (4)	0.2% (1)	0.6% (3)	0.0% (0)
Education level, % (*n*)				
Primary or below	9.4% (94)	8.6% (43)	10.2% (51)	2.0% (4)
Secondary/sub-degree	36.1% (361)	38.0% (190)	34.2% (171)	23.0% (46)
Post-secondary/degree	54.5% (545)	53.4% (267)	55.6% (278)	75.0% (150)
Employment status, % (*n*)				
In employment or self-employment	69.6% (696)	70.6% (353)	68.6% (343)	57.0% (114)
Retired	13.6% (136)	13.2% (66)	14.0% (70)	22.0% (44)
Housework	2.8% (28)	2.8% (14)	2.8% (14)	7.0% (14)
Student	12.0% (120)	11.2% (56)	12.8% (64)	12.5% (25)
Not in employment	1.6% (16)	1.6% (8)	1.6% (8)	1.0% (2)
Other	0.4% (4)	0.6% (3)	0.2% (1)	0.5% (1)
Responsibility for any children aged under 18, % (*n*)	20.1% (201)	19.6% (98)	20.6% (103)	18.0% (36)
Responsibility for any person aged over 18, % (*n*)				
Currently a carer	30.7% (307)	31.6% (158)	29.8% (149)	31.0% (62)
Have been a carer in the past	22.0% (220)	21.8% (109)	22.2% (111)	20.5% (41)
Have never been a carer	47.3% (473)	46.6% (233)	48.0% (240)	48.5% (97)
Experience with serious illness, % (*n*)				
Personal	11.1% (111)	11.8% (59)	10.4% (52)	13.5% (27)
Relatives	33.2% (332)	34.4% (172)	32.0% (160)	49.5% (99)
Others	16.4% (164)	19.0% (95)	13.8% (69)	38.0% (76)

DCE indicates discrete choice experiment; SD, standard deviation.

distributed, whereas the interaction terms were modeled as fixed effects. The utility function is given by

$$\begin{aligned} V_j = {} & \beta_1 \mathrm{MO2} + \beta_2 \mathrm{MO3} + \beta_3 \mathrm{SC2} + \beta_4 \mathrm{SC3} + \beta_5 \mathrm{UA2} \\ & + \beta_6 \mathrm{UA3} + \beta_7 \mathrm{PD2} + \beta_8 \mathrm{PD3} + \beta_9 \mathrm{WSU2} + \beta_{10} \mathrm{WSU3} \\ & + \beta_{11} \mathrm{MO2} \times \mathrm{Adult} + \beta_{12} \mathrm{MO3} \times \mathrm{Adult} \\ & + \beta_{13} \mathrm{SC2} \times \mathrm{Adult} + \beta_{14} \mathrm{SC3} \times \mathrm{Adult} \\ & + \beta_{15} \mathrm{UA2} \times \mathrm{Adult} + \beta_{16} \mathrm{UA3} \times \mathrm{Adult} \\ & + \beta_{17} \mathrm{PD2} \times \mathrm{Adult} + \beta_{18} \mathrm{PD3} \times \mathrm{Adult} \\ & + \beta_{19} \mathrm{WSU2} \times \mathrm{Adult} + \beta_{20} \mathrm{WSU3} \times \mathrm{Adult} \end{aligned}$$

In addition, another pooled mixed logit model was estimated on the LSS, with the utility function

$$V_j = \beta_1 \mathrm{LSS} + \beta_2 \mathrm{LSS} \times \mathrm{Adult}$$

For both models, significant interaction terms indicate difference in preference between perspectives.

The latent DCE values were anchored to cTTO data using the worst health state rescaling approach.[40] Mixed logit model coefficients were rescaled so that the utility for the worst health state matched the mean cTTO value of the worst health state (33333). The estimated coefficients represent utility decrement from 1 (full health). The value set based on worst state rescaling was estimated for both perspectives. Implied rankings of the attributes were compared between perspectives. Attributes with coefficients of larger magnitude were considered to be more important, regardless of their signs. Line plots of the elicited utility values for both perspectives were included, in which the 243 health states were ordered by their utility values in the adult perspective. Difference in preferences between perspectives

Table 2. Descriptive results for observed and censoring-adjusted cTTO values.

Profile	Observed			Censoring adjusted	
	Mean	SD	SE	Mean	SE
11112	0.939	0.123	0.009	0.939	0.009
11121	0.933	0.110	0.008	0.933	0.008
21111	0.922	0.109	0.008	0.922	0.008
22223	0.590	0.389	0.028	0.588	0.028
22232	0.400	0.495	0.035	0.392	0.037
31133	0.268	0.527	0.037	0.254	0.040
32223	0.430	0.453	0.032	0.424	0.033
33233	0.005	0.554	0.039	−0.023	0.044
33323	0.031	0.560	0.040	0.009	0.043
33333	−0.173	0.555	0.039	−0.227	0.047

SD indicates standard deviation; SE, standard error.

would be observed by large gaps between the lines for the 2 perspectives.

All statistical analyses were performed using Stata/MP version 18.0 (StataCorp LP, College Station, Texas). All significance tests were 2-tailed and P values $< .05$ were taken to indicate statistical significance.

Results

Sample Composition

A total of 1000 and 200 respondents from the general adult population in Hong Kong were recruited to value EQ-5D-Y-3L health states using DCE and cTTO, respectively. Sample characteristics were summarized in Table 1, showing similarity in characteristics between perspectives with most P values $> .05$, except for experience with others with serious illness (adult perspective: 19.0%, child perspective: 13.8%, $P = .026$). Proportions of respondents reporting full health were also similar (adult perspective: 49.0%; child perspective: 52.8%; see Appendix Table 2 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2025.06.008). Samples for the DCE survey were representative of the general adult population in Hong Kong. No DCE or cTTO data were excluded because of quality concerns.

Results for cTTO

A total of 200 respondents participated in the cTTO interviews. On average, respondents took 51.5 minutes (SD 23.3) to complete an interview, with 10.2 moves (SD 9.9) per health state. A small proportion of respondents (5%) did not meet the quality control requirements, which were not excluded. Overall distribution of the cTTO values (see Appendix Fig. 1 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2025.06.008) indicated 14.8% of negative values and 12.7% of values on 1. The observed/censoring-adjusted mean of cTTO values ranged from 0.939/0.939 (SE 0.009/0.009) for 11112 to −0.173/−0.227 (SE 0.039/0.047) for 33333 (Table 2).

Results for DCE

Among the 1000 DCE respondents, 96.8% selected the better health state in the dominance test, indicating good data quality. Figure 2 shows the proportions of respondents choosing health state A over B based on the difference in LSS (A minus B), with a decreasing trend as the LSS difference increased from −3 to +3. This logical consistency was confirmed by the P-trend test in both samples ($P < .001$). Observed probabilities of choosing health state A over B was presented in Appendix Table 3 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2025.06.008. Most choice pairs (141 of 150) had no significant difference between perspectives, showing that perspectives did not have systematic effects on preferences across health states. Among choice pairs with difference in LSS, proportions of choosing the health state with lower LSS were 72.4% in adult perspective and 74.8% in child perspective, which were comparable using a random-effect logit model adjusting for LSS difference ($P = .121$).

Results for Mixed Logit Models and RAI

Latent DCE values were estimated using mixed logit models. In both perspectives, coefficients for all attribute levels were significant. Standard deviations for all coefficients were significant for both perspectives, indicating preference heterogeneity in all dimensions and levels. Coefficient for SC3 (adult perspective: 1.457; child perspective: 1.612) was the smallest in magnitude among the 5 dimensions (see Appendix Table 4 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2025.06.008). Thus, RAIs were obtained by normalization using SC (Table 3). RAI of PD was the highest among the 5 dimensions (adult perspective: 1.572; child perspective: 1.745). No significant difference in RAI scores was found between perspectives for any of the dimensions (MO: −0.043; UA: 0.088; PD: −0.173; WSU: 0.111). Excluding the 32 respondents (adult perspective: 18, child perspective: 14) who failed the dominance test did not alter the results.

Results for Pooled Mixed Logit Models

Results of scale multinomial logit models showed no significant difference in scale parameters between the 2 perspectives ($P = .811$), suggesting appropriateness of pooling. Results of pooled mixed logit models were included in Appendix Table 5 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2025.06.008. Pooled model on attribute did not show significant difference in perspectives for most attributes, except for PD2 ($P = .040$) and PD3 ($P = .043$), and pooled model on LSS showed no significant effect of perspectives ($P = .171$).

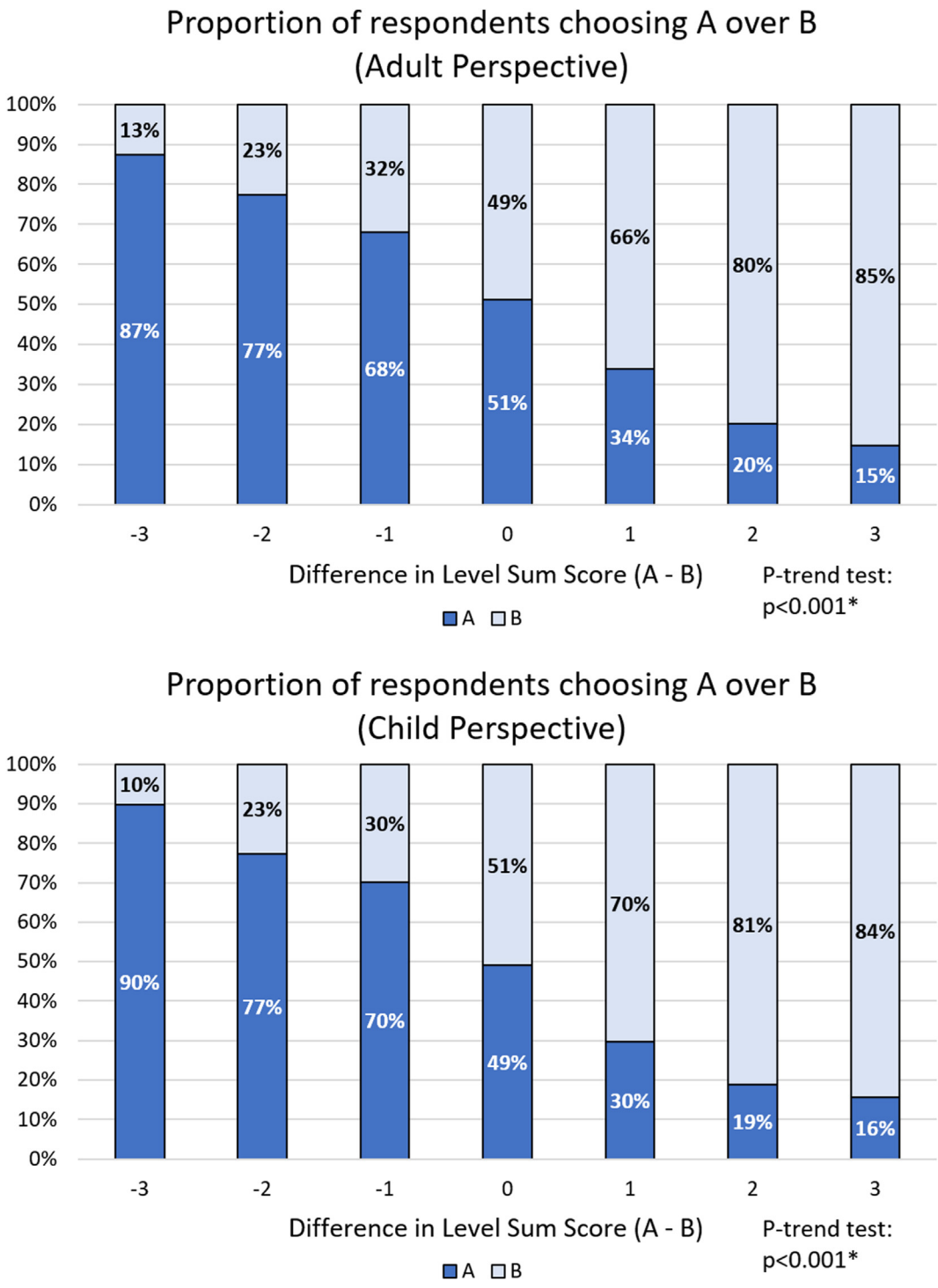
Results by Worst State Rescaling

Utility values by worst state rescaling were estimated for both perspectives. All estimated coefficients were significant (see Appendix Table 6 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2025.06.008). The most important level-3 attribute was PD3 (adult perspective: −0.282; child perspective: −0.313), whereas the least important level-3 attribute was SC3 (adult perspective: −0.180; child perspective: −0.179). For both perspectives, the 5 most important attributes were level 3, and the 5 least important attributes were level 2, with the order of PD3, UA3, WSU3, MO3, and then SC3 for the 5 level-3 attributes (see Appendix Table 7 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2025.06.008). Line plot of all 243 elicited utility values showed no large differences in the values between perspectives (Fig. 3).

Discussion

Elicitation methods used for child health valuation have considerable heterogeneity in the effects of both methods and

Figure 2. Proportion of respondents choosing health state A over health state B in the discrete choice experiment.



perspectives on health-state valuations,[41] implying the difficulty in eliciting preference for child health. In this study, we presented preliminary evidence on the EQ-5D-Y-3L valuation in Hong Kong, and the preference for EQ-5D-Y-3L health states between the adult own and child perspectives. No significant difference in latent scale utilities was observed between the 2 perspectives, suggesting that perspectives do not affect the relative order of dimensions. The differences in RAI scores were not significant, even the largest difference (−0.173 for PD) would translate to a difference of approximately 0.03 for the anchored utilities, which is unlikely to be practically meaningful.

Previous studies have compared perspectives using various elicitation methods[22-31] (see Appendix Table 1 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2025.06.008) and reported mixed findings on the effect of perspectives on Y-3L health states among adult respondents. For instance, Kind et al

Table 3. Relative attribute importance scores and differences between perspectives.

EQ-5D-Y dimension	Adult perspective		Child perspective		Difference (adult-child)			
	RAI	SE	RAI	SE	Diff	SE	95% CI	*P* value
Mobility (walking about)	1.279	0.097	1.322	0.094	−0.043	0.135	(−0.307, 0.221)	.750
Looking after myself	1.000	NA	1.000	NA	NA	NA	NA	NA
Doing usual activities	1.530	0.111	1.442	0.092	0.088	0.144	(−0.194, 0.370)	.540
Having pain or discomfort	1.572	0.151	1.745	0.146	−0.173	0.210	(−0.586, 0.239)	.410
Feeling worried, sad, or unhappy	1.449	0.129	1.338	0.101	0.111	0.164	(−0.210, 0.432)	.499

Note. Relative attribute importance scores were calculated using coefficients estimated by the mixed logit model. Standard errors for relative attribute importance scores and differences were obtained using the delta method. The attribute coefficients were normalized using the least important attribute (looking after myself). CI indicates confidence interval; Diff, difference; NA, not applicable; RAI, relative attribute importance; SE, standard error.

reported lower VAS values for the child perspective compared with the adult perspective,[22] whereas Dewilde et al reported opposite effect using TTO and VAS.[28] Lipman et al used VAS and cTTO and reported small systematic differences between perspectives in both directions, possibly dependent on the health states, suggesting heterogeneity perspective effects.[25] Differences in elicitation methods may contribute to differences in previous findings, limiting their comparability. Although our study found no difference in relative preference between perspectives, this only suggests that adults assign the same rank order to dimensions for 10-year-old child as they do for themselves. However, in the valuation process, cTTO is required to anchor latent coefficients to a utility scale. The absence of adult perspective cTTO data in this study may contribute to the difference between our null results and prior research using TTO,[23-25,28-31] which commonly report effect of perspectives. Effect of perspectives may be more prominent in cTTO tasks, in which adults are less willing to trade-off life-years for a child,[20,21] resulting in different scale range. This may explain the systematic difference in value sets, in which value sets for adults have larger coefficients.[42]

Several studies adopted a within-subject approach, in which adult respondents completed tasks in all perspectives, with some randomizing order of perspectives[22,24,25,28] (see Appendix Table 1 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2025.06.008). There are several limitations of the within-subject approach. First, respondents may experience anchoring effect, in which their elicited values under subsequent perspectives are influenced by the first perspective.[43,44] Second, demand effects are more pronounced, in which the respondents, either consciously or not, recognize the study objective to compare perspectives and adjust their answers to align with what they perceive as the study's expectations.[44] Finally, the increased cognitive demand from participating in multiple elicitation tasks increases the risk of fatigue, especially when several perspectives are compared. Our study used a between-subject approach by randomly assignment of perspectives, which minimized anchoring, demand effects, and fatigue of respondents.

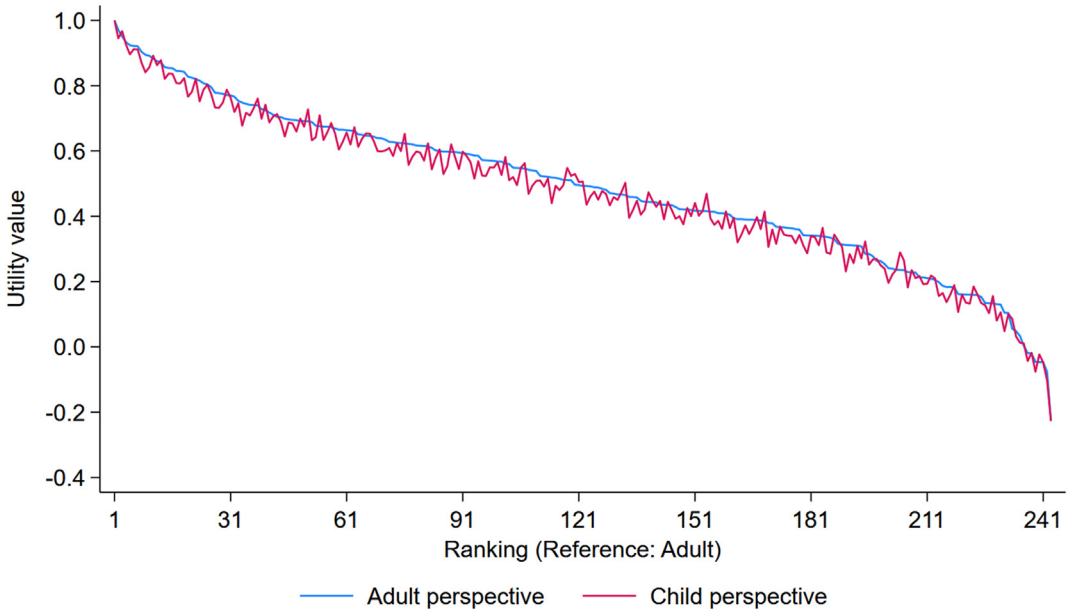
The dimension ranking in this study (see Appendix Table 7 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2025.06.008) differs from the Hong Kong EQ-5D-5L value set (mobility, pain/discomfort, self-care, anxiety/depression, and usual activities).[45] In EQ-5D-5L, mobility and self-care are ranked higher, reflecting adults' expected independence compared with children's reliance on parents. Although the results from adult perspective do not match the EQ-5D-5L value set, several factors limited the comparability. First, the wording and number of levels in this study differed from the EQ-5D-5L. Second, we applied mixed logit models to the DCE data, whereas a hybrid model combining DCE and cTTO data was used for EQ-5D-5L. The rank difference between the 2 studies cannot be statistically tested. Third, our sample size was 500 per perspective instead of the 1000 recommended by the valuation protocol.[6] As such, formal comparison with a published value set is not possible. Finally, population values may have shifted over time. Further studies are needed to compare current values with those from previous valuation studies.

Populations with EQ-5D-Y-3L value sets[8-16] all considered PD as the most important dimension for children and adolescents, which align with our findings for Hong Kong. However, the Hong Kong population ranked UA second, differing from existing value sets in which either WSU or MO was ranked second. In mainland China, which is culturally similar to Hong Kong, UA was ranked fourth. On the other hand, "looking after myself" was ranked the least important in Hong Kong, consistent with most published EQ-5D-Y-3L value sets except Germany, where mobility was least important.[8-16] This suggests that problems with self-care are perceived as less severe compared with problems in other dimensions for children and adolescents.

The mean observed cTTO value for state 33333 in Hong Kong was similar to those in Asian countries[14-16] and higher than those in European countries[8-13] (see Appendix Table 8 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2025.06.008). The utility value for the worst health state 33333 in our study was generally lower than those in Asian countries[14-16] but higher than those in European countries[8-13] (see Appendix Table 8 in Supplemental Materials found at https://doi.org/10.1016/j.jval.2025.06.008). A higher utility value for state 33333 implies a lower willingness to trade-off life-years for a child. This suggests that the willingness of Hong Kong general population to trade-off life-years for a child is between those of Asian countries and European countries.

In standard EQ-5D-Y-3L valuation, adult respondents express their preferences for a hypothetical 10-year-old child. This introduces 2 key methodological challenges.[17] First, the child perspective entails additional change in perspectives from deciding for oneself to deciding for others, which may influence respondents' willingness to trade-off life-years and health state quality for others.[17] Previous work by Lipman et al measured the effect of the decomposed change in perspectives for EQ-5D-Y-3L.[25] Future studies may further investigate these effects using a between-subject design in general population samples. Second, there is a lack of information on the hypothetical child, particularly the characteristics relevant to preferences.[17] There is limited evidence on how the heterogeneity on the hypothetical child might affect preference. Although the age of 10-year is provided, there is debate on whether this is representative of the entire EQ-5D-Y-3L age range from 8 to 15 years, as raised in a qualitative

Figure 3. Utility values of the 243 EQ-5D-Y-3L health states.



study.[46] Studies have shown minimal impact of the age of the hypothetical child on preferences measured by VAS[47] and DCE.[48] Future research may explore the effect of age on cTTO values, in which durations and trade-off of life-years are more relevant, as well as the effect of age in Asian contexts.

Although published EQ-5D-Y-3L value sets followed the international valuation protocol, there is a need to explore the preferences of adolescents and their potential involvement in EQ-5D-Y-3L valuation.[18,19] In particular, studies have shown differences in EQ-5D-Y-3L preferences between adults and adolescents using DCE.[26,27] Qualitative studies in the United States and Canada invited stakeholders to explore the involvement of adolescents in EQ-5D-Y-3L valuation, where a majority of the stakeholders in both studies favored the inclusion of adolescents.[49,50]

This study had several limitations. First, because the survey was conducted online only via video-conferencing software, there was no in-person explanation to aid understanding. It was challenging to assess respondents' comprehension, engagement, and interest. Nevertheless, recent studies have shown that data quality in valuation studies does not differ between online and in-person modes.[51-53] Second, the DCE sample of 500 per perspective was smaller than the 1000 suggested by the protocol.[6] Third, only child perspective cTTO data were collected. Given that previous studies using cTTO report differences between perspectives, including adult perspective cTTO data would facilitate a more comprehensive comparison. Fourth, the sample had higher proportion of respondents with postsecondary/degree education compared with the general population (34.6%),[54] which might limit generalizability. Finally, the high proportion of elderly in Hong Kong and their limited access to technological devices limited the representativeness for this age group.

Conclusions

This study obtained preferences toward EQ-5D-Y-3L health states in Hong Kong. No significant difference was found in relative preferences for EQ-5D-Y-3L health states between the adult own perspective and a hypothetical 10-year-old child perspective. The most important dimension was "having pain or discomfort," which was consistent with the published EQ-5D-Y-3L value sets. The Hong Kong EQ-5D-Y-3L value set may be estimated following the valuation protocol. Future research in Asia may explore the effect of perspectives on preferences elicited by cTTO, and studies using different study samples and elicitation methods may provide more evidence on the effects of perspectives, which can contribute to the development of impending valuation protocol for the recently launched EQ-5D-Y-5L.

Author Disclosures

Author disclosure forms can be accessed below in the Supplemental Material section. Dr Luo is an editor for *Value in Health* and had no role in the peer-review process of this article.

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