

A SYSTEMATIC REVIEW OF THE REPORTING AND CHARACTERISTICS OF HEALTH-STATE UTILITY IN COST-EFFECTIVENESS ANALYSES IN ASIA

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Background

- Worldwide cost-effectiveness analysis using quality-adjusted life year (QALY) as the effect measure has been increasingly used to inform reimbursement decisions in healthcare.
- Appropriate use of health-state utility (HSU) values is essential to the quality of the evidence generated in such analyses.
- For assessing the appropriateness of HSU values, adequate reporting is necessary.
- Guidelines for collecting, selecting, and/or reporting HSU data in economic evaluation studies are largely consistent with each other
- However, it is not known how well good practices regarding HSU are followed particularly in Asia.

Study Aim

- This study aims to summarize the characteristics of HSU data used in CUAs in Asia and their trends over the past decades. This study also evaluates the quality of reporting HSU-related information and identifies suboptimal practices that can be improved in the future.

Methods

- Databases:** PubMed, Web of Science, Medline, and Embase from inception to December 2019
- Search strategy:** economic evaluation/cost-utility analysis/QALY/ + Asia countries → QALY-based cost-effectiveness analyses (English)
- Data extraction:** characteristics of raw HSUs for base-case analysis
 - Valuation method and instrument
 - Country of sample for collecting HRQoL data
 - Sample size
 - Country of preference weights
- Data analysis:** descriptive analysis & over-time trends

Table 1 Technical characteristics of HSUs included in the review (n=4,025)

Characteristic	Category	n	% (excluding missing HSUs)	% (excluding missing and ineligible HSUs)
Estimation method	EQ-5D	781	19.7	59.1
	SF-6D	147	3.7	11.1
	HUI	54	1.4	4.1
	QWB	5	0.1	0.4
	TTO	170	4.3	12.9
	SG	87	2.2	6.6
	VAS	38	1.0	2.9
	Mapping	67	1.7	5.1
	Not reported/missing	2651	66.7	-
	Ineligible*	52	-	-
Country of sample	China	85	2.3	11.7
	Japan	212	5.7	29.2
	Thailand	95	2.6	13.1
	South Korea	66	1.8	9.1
	Iran	39	1.1	5.4
	Taiwan	18	0.5	2.5
	Singapore	46	1.3	6.3
	Hong Kong	41	1.1	5.6
	Malaysia	12	0.3	1.7
	India	12	0.3	1.7
	Other Asian countries (*)	33	0.9	4.5
	Non-Asian countries (#)	68	1.8	9.4
	Not reported/missing	2978	80.4	-
	Ineligible#	347	-	-
Sample size	n<50	200	5.0	31.4
	50≤n<100	146	3.7	22.9
	n≥100	291	7.3	45.7
	Not reported/missing	3363	84.1	-
	Ineligible*	52	-	-
Country of preferences	China	41	1	12.3
	Japan	68	1.7	20.4
	Thailand	48	1.2	14.4
	Hong Kong	21	0.5	6.3
	South Korea	35	0.9	10.5
	Singapore	15	0.4	4.5
	Malaysia	16	0.4	4.8
	Taiwan	24	0.6	7.2
	Other Asian countries※	20	0.5	6.0
	Non-Asian countries (※)	45	1.1	13.5
	Not reported/missing	3667	92.2	-
	Ineligible*	52	-	-

* Including HSUs estimated based on an unestablished method (n=20) or expert opinion (n=32).

※Including following countries: Iran (12); India (6); Sri Lanka (2).

(※) Including following countries: UK (26); US (11); Australia (6); Germany (2).

(*) Including following countries: Indonesia (10); Israel (6); Lebanon (6); Saudi Arabia (5); Vietnam (4); Turkey (2).

(#) Including following countries: UK (34); US (24); Sweden (9); Australia (1).

Including HSUs using an unjustifiable method to derive HUSs (n=52) and using a TTO/SG/VAS method to derive HSUs (n=295).

HSU, health state utility; HRQoL, health-related quality of life; HUI, Health Utilities Index; QWB, Quality of Well-Being; TTO, time trade-off; SG, standard gamble; VAS, visual analogue scale.

Results

- The initial search identified a total of 3,379 studies from four databases. After removing duplicates, 1,958 studies were included in the review process. Based on assessment of titles and abstracts, 932 studies were excluded. Of the remaining 1026 studies, full-text review excluded 237 studies.
- A total of 789 studies were included in the final sample and among which, 577 papers obtained the HSUs from published literature and 123 papers used unpublished empirical data to calculate the HSUs. The rest of papers used mixed sources/expert option or did not report their methods.
- A total of 4,025 HSUs were identified from the base-case analyses of the included studies. The details are shown in Table1.
- The technical characteristics were not reported for the majority the 4,025 HSUs. The percentage of missing information was 66.7% for estimation method, 80.4% for country of sample, 84.7% for sample size, and 92.2% for country of health preferences. See Figure 1 for the trend of four technical characteristics.

Figure 1 Change in characteristics of HSU values over time

