

Exploring the Known Group Validity between EQ-5D-5L and GAD-7 during Hong Kong COVID-19 Pandemic Situation

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Background

Facing the global COVID-19 pandemic, it was frequently reported that the public had been experiencing raised anxiety in such public health crisis.

As the EuroQol-5D-5L (EQ-5D-5L) Hong Kong value set was developed and validated back in 2014 [1], the utility derived by the past local value set may not perform well in mapping patients' health utility in 2020, a time when anxiety, as one of the EQ-5D-5L attributes, may have increased emphasis.

Objective

To examine the known group validity between the EQ-5D-5L instrument and the General Anxiety Disorder-7 (GAD-7) tool in Hong Kong (HK) 2021 COVID-19 context [2].

Method

- A randomized cross-sectional telephone survey was carried out in July 2020 and 510 subjects were recruited with a response rate of 57.3%.
- Respondents first answered EQ-5D-5L, followed by GAD-7 and demographic questions were collected last.
- GAD-7 responses were further categorized into minimal, mild, moderate and severe level according to total derived score.
- Regressions were then modelled against EQ-5D-5L derived values and Visual Analog Scale (VAS) with GAD-7 levels.

Results

GAD-7 Results

- Mean Score: 1.64
- Suffering from Anxiety (GAD-7 ≥ 10): 3.7%

EQ-5D-5L Results

- Mean VAS: 75.5
- Mean Derived Utility: 0.923

	Over the last two weeks, how often have you been bothered by the following problems?	Not at All [0]	Several Days [1]	More than half of the days [2]	Nearly everyday [3]
1	Feeling nervous, anxious, or on edge	380	106	19	5
2	Not being able to stop or control worrying	430	56	19	5
3	Worrying too much about different things	418	56	22	7
4	Trouble relaxing	410	66	28	6
5	Being so restless that it is hard to sit still	449	42	14	5
6	Becoming easily annoyed or irritable	416	71	19	4
7	Feeling afraid, as if something awful might happen	439	50	15	6

Table 1 . Summary of the GAD-7 Responses (n=510)

Level (n=510)	Count (%)
Minimal [0-4]	445(87.2)
Mild [5-9]	46 (9.02)
Moderate [10-14]	13 (2.55)
Severe [15-21]	6 (1.18)

Table 2 . Summary of the GAD-7 Responses with Respect to Cut-offs

EQ-5D VAS			EQ-5D-5L Value Set Derived Utility	
	Coefficient (95% CI)	p-value	Coefficient(95% CI)	p-value
Minimal	REF	-	REF	-
Mild	-6.55 (-10.29, -2.82)	<0.001*	-0.05 (-0.09, -0.01)	0.01*
Moderate	- 10.96 (-17.74, -4.17)	<0.001*	-0.11 (-0.19, -0.04)	0.003*
Severe	-13.24 (-23.15, -3.33)	0.009*	-0.14 (-0.25, -0.03)	0.01*

Table 3 . Summary of the GAD-7 Responses with Respect to Cut-offs(n=510)

Note: * $p < 0.05$

- Significant drop in health utility could be observed with the increasing level of anxiety in both health utility measurement tools.
- The magnitude of the decline across different levels were highly similar in both EQ-5D-5L and VAS.

Conclusions

- This study explored and supported the known-group validity of EQ-5D-5L HK value set in terms of anxiety screening.
- Utility derived by EQ-5D-5L HK exhibited reliability despite the possible increase in anxiety in times of COVID-19.

Reference:

- Wong, Eliza Lai-Yi et al. "Normative Profile of Health-Related Quality of Life for Hong Kong General Population Using Preference-Based Instrument EQ-5D-5L." *Value in health : the journal of the International Society for Pharmacoeconomics and Outcomes Research* vol. 22,8 (2019): 916-924. doi:10.1016/j.jval.2019.02.014
 - Spitzer RL, Kroenke K, Williams JBW, Löwe B. A Brief Measure for Assessing Generalized Anxiety Disorder: The GAD-7. *Arch Intern Med*. 2006;166(10):1092-1097. doi:10.1001/archinte.166.10.1092
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