ISPOR Asia Pacific Summit 2026
Poster code: MSR19

Development of Preference Weights for the 10-item Singapore Caregiver Quality Of Life Scale

Chun Fan Lee[1] , Mihir Gandhi[1], Sanjeewa Kularatna[2], Sameera Senanayake[2], Hwee-Lin Wee[3], Rahul Malhotra[2], Grace Yang[4], Shirlyn HS Neo[4], Yin Bun Cheung[1]

[1] Centre for Biomedical Data Science, Duke-NUS Medical School, Singapore
[2] Health Services Research & Population Health, Duke-NUS Medical School, Singapore
[3] Saw Swee Hock School of Public Health, National University of Singapore, Singapore
[4] Division of Supportive and Palliative Care, National Cancer Centre Singapore, Singapore

This study was funded by Nation Medical Research Council, Singapore (ID: PHRGNIG24jul-0003)

Background

Evaluating informal caregivers' quality of life (QoL) is essential for health economic evaluations.

Most preference-based, caregiver-specific QoL instruments are not anchored to death, hence a quality-adjusted life year (QALY) cannot be computed. Moreover, these instruments were originally developed in Western countries.

There is a lack of death-anchored, culturally appropriate instruments established in the East.

The 10-item Singapore Caregiver Quality of Life Scale (SCQOLS-10) is profile-based, 5-domain instrument developed and validated in Singapore.[1,2] However, it produces a score but not a utility value, limiting its use in health economic evaluations.

Objective

To develop preference weights for the SCQOLS-10 to calculate a death-anchored, culturally appropriate SCQOLS utility for decision-making and resource allocation.

Methods

Survey

We conducted an online survey of informal caregivers residing in Singapore. This survey included questions on:

- Demographics
- Caregiving information
- QoL assessed by SCQOLS-10
- 5 Discrete Choice Experiment (DCE) tasks (Figure 1)
- 6 Visual Analog Scale (VAS) tasks (Figure 2)

Figure 1. DCE task

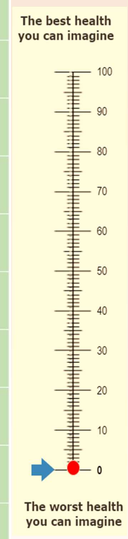
Which scenario is the better one?
Please indicate at the bottom which scenario is the better one you prefer.

Item label (hover to view full descriptions)	Scenario A	Scenario B
Aches and pains	Not at all	Somewhat
Poor appetite	Not at all	
Fearful of losing family member	Not at all	Very much
Feeling of frustration	Somewhat	
Thankful for good things	Somewhat	Very much
Closer family relationship	Very much	
Unable to leave home/hospital	Somewhat	Very much
Unable to do what I want	Not at all	
Depletion of saving	Somewhat	Not at all
Uncertain financial situation	Not at all	
Which scenario do you prefer?	●	●

Figure 2. VAS task

How do you rate Scenario II?

Item label	Description	Scenario II
Aches and pains	I have had more aches and pains due to caregiving activities	Somewhat
Poor appetite	My appetite is poor	Not at all
Fearful of losing family member	I am fearful of losing my family member I am taking care of	Somewhat
Feeling of frustration	I feel frustrated	Not at all
Thankful for good things	I am thankful for the good things that have happened to me even in difficult times	Somewhat
Closer family relationship	Caring for my family member has drawn the family closer together	Somewhat
Unable to leave home/hospital	I am bothered that I am not able to leave home or hospital	Not at all
Unable to do what I want	I am not able to do what I want to do	Somewhat
Depletion of saving	I am troubled that my family member's condition is depleting my savings	Not at all
Uncertain financial situation	I feel uncertain about my future financial situation	Somewhat



Statistical analysis

DCE data were fitted to a weighted conditional logit model with robust error. Estimates were anchored to death via a mapping approach using the VAS data, generating a set of preference weights.

Validation

Respondents' SCQOLS utility were compared among subgroups stratified by:

- Caregiver role (sole caregiver or not)
- Care-receiver performance status

Results

Respondents

We recruited 1,036 caregivers, 925 who passed data quality checks were analyzed. They had a mean age of 38.6 years, 52% were female, 50% attained university education, 25% were the sole informal caregiver of the care-receiver, 69% cared for their parents.

Preference weights

A set of preference weights were developed for the SCOQLS-10 (Figure 3).

The item *PW6 Poor appetite* has the largest utility decrement (-0.115), followed by *FW3 Uncertain financial situation* (-0.110), whereas *PW4 Aches and pains* has the smallest decrement (-0.047).

SCOLQS utility

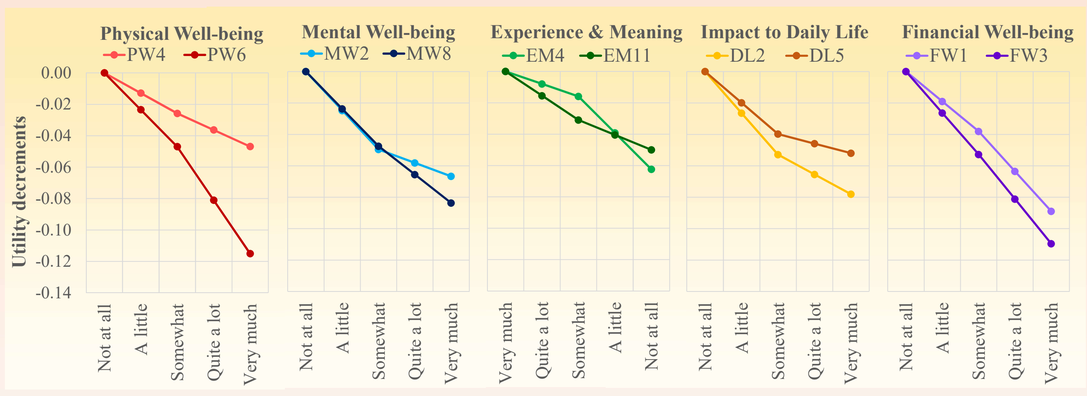
The SCQOLS utility is computed by 1 + Sum of utility decrements over all items. It ranges between 0.247 (the worst state) and 1 (the best state), while a value of 0 indicates a state no different from death.

The sample had a mean (SD) utility of 0.730 (0.131), ranging from 0.378 to 1, with minimal ceiling effects of 1.51%.

The SCQOLS utility showed significant discriminative ability in relation to (Table):

- Difference in caregiver role (p-value = 0.009)
- Trend in care-receiver performance status (p-value = 0.032)

Figure 3. Utility decrements



Response	PW4	PW6	MW2	MW8	EM4	EM11	DL2	DL5	FW1	FW3
Not at all	0	0	0	0	–0.062	–0.050	0	0	0	0
A little	–0.013	–0.024	–0.025	–0.024	–0.039	–0.040	–0.026	–0.020	–0.019	–0.026
Somewhat	–0.026	–0.047	–0.050	–0.047	–0.016	–0.031	–0.053	–0.040	–0.038	–0.053
Quite a lot	–0.036	–0.081	–0.058	–0.066	–0.008	–0.015	–0.065	–0.046	–0.064	–0.081
Very much	–0.047	–0.115	–0.067	–0.084	0	0	–0.078	–0.052	–0.089	–0.110

Table. Discriminative ability of the SCQOLS utility

Stratified by	Level	N	Mean	P
Caregiver role	Sole caregiver	227	0.711	0.009
	One of a few persons	698	0.737	
Care-receiver performance status	0: No physical limitation, without symptoms	79	0.757	0.032
	1	328	0.729	
	2	278	0.730	
	3	179	0.737	
	4: Bedridden	61	0.684	

Conclusions

Preference weights were successfully developed for the SCQOLS-10. The SCQOLS utility can be calculated to quantify caregiver QoL and compute QALY used in cost-effectiveness analysis, facilitating health economic evaluations.

This will support local and regional decision-making and resource allocation regarding informal caregivers, without the need for adaptation from foreign measures.

References

1. Cheung YB, et al. (2019). Development and evaluation of a quality of life measurement scale in English and Chinese for family caregivers of patients with advanced cancers. *Health and Quality of Life Outcomes;*17:1-12.
2. Cheung YB, et al. (2020). Two valid and reliable short forms of the Singapore caregiver quality of life scale were developed: SCQOLS-10 and SCQOLS-15. *Journal of Clinical Epidemiology;*121:101-108.