

# MEASUREMENT PROPERTIES OF 15-ITEM SINGAPORE CAREGIVER QUALITY OF LIFE SCALE (SCQOLS-15) IN FAMILY CAREGIVERS OF PATIENTS WITH HEART DISEASES

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## OBJECTIVE

To evaluate the measurement properties of the 15-item version of Singapore Caregiver Quality of Life Scale (SCQOLS-15) in family caregivers of patients with heart diseases.

## METHODS

- Family caregivers of patients with chronic heart diseases in Singapore self-administered SCQOLS-15 at baseline and 1 week later.
- Convergent and divergent validity of SCQOLS-15 and its subscales (physical well-being [PW], mental well-being [MW], experience & meaning [EM], impact on daily living [DL], financial well-being [FW]) was assessed in terms of Spearman correlation coefficient ( $r$ ) with Instrumental Activity of Daily Living (IADL) score, Brief Assessment Scale for Caregivers (BASC) and its subscales, and Finance subscale of Caregiver Reaction Assessment (CRA).
- Know-group validity was assessed using the New York Heart Association (NYHA) performance class.
- Internal consistency and test-retest reliability were assessed using Cronbach's alpha ( $\alpha$ ) and intraclass correlation coefficient (ICC), respectively.

## PARTICIPANTS

**Table 1: Participant (caregiver) characteristics**

Characteristics	N = 327
Age (year), Mean (SD)	49 (13)
Women, n (%)	222 (67.9)
Ethnicity, n (%)	
Chinese	229 (70.0)
Malay	59 (18.0)
Indian	30 (9.2)
Others	9 (2.8)
Education, n (%)	
Primary or below	28 (8.6)
Secondary	112 (34.3)
Post-secondary	187 (57.2)
Relationship with patient, n (%)	
Spouse	92 (28.1)
Son or daughter	212 (64.8)
Other relatives	23 (7.0)
Hours caregiving per week, Mean (SD)	31 (37)
Caregiver role, n (%)	
Only person	80 (24.5)
Primary person	111 (33.9)
One of the few persons	136 (41.6)
Patient's NYHA performance class, n (%)	
I (Best)	88 (26.9)
II	132 (40.4)
III	79 (24.2)
IV (Worst)	28 (8.6)

## RESULTS

**Table 1: Convergent and divergent validity**

Measures, Spearman correlation	PW	MW	EM	DL	FW	Total score
IADL score	0.30**	0.19**	-0.01	0.31**	0.26**	0.31**
BASC Total	0.50**	0.64**	0.10	0.60**	0.47**	0.68**
BASC Negative personal impact	0.47**	0.53**	0.02	0.62**	0.46**	0.63**
BASC Positive personal impact	0.20**	0.09	0.41**	0.32**	0.18**	0.37**
CRA Finance	-0.37**	-0.32**	-0.05	-0.31**	-0.64**	-0.45**

\* $p < 0.05$ , \*\* $p < 0.01$ .

**Table 2: Known-group validity**

	N	PW	MW	EM	DL	FW	Total score
<b>Patient's NYHA performance class, Mean</b>							
Class I/II	220	88.9	59.7	69.7	84.2	76.3	76.4
Class III/IV	107	82.7	50.5	64.1	74.0	67.2	68.6
Difference (95% CI)		6.2**	9.1**	5.6*	10.3**	9.1**	7.9**
<b>Caregiver role, Mean (SD)</b>							
One of the few persons	136	89.7	57.0	69.6	83.8	78.2	76.1
Only or primary person	190	84.8	56.5	66.6	78.8	69.8	72.2
Difference (95% CI)		4.9*	0.5	3.0	4.9	8.4*	3.9*

\* $p < 0.05$ , \*\* $p < 0.01$ .

**Table 3: Internal consistency and test-retest reliability**

	Internal consistency	Test-retest reliability
	Cronbach's alpha	Intraclass correlation coefficient
	(N = 327)	(N = 150)
PW	0.83	0.80
MW	0.78	0.80
EM	0.82	0.81
DL	0.89	0.84
FW	0.87	0.87
Total score	0.81	0.89

ICC was calculated between the baseline and follow-up assessment at 1 week among the participants who provided follow-up assessment, had 'about the same' quality of life compared to the baseline on 7-point Likert scale (1-Very much better, 2-Moderately better, 3-A little better, 4-About the same, 5-A little worse, 6-Moderately worse, 7-Very much worse), and were caring patient who did not have emergency visit or admission in a hospital/medical facility since the baseline interview.

## CONCLUSION

- SCQOLS-15 is valid and reliable for measuring the quality of life in family caregivers of patients with heart diseases.
- Further studies will be required to evaluate responsiveness of the measure.

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