A Systematic Review and Quality Assessment of Cardiovascular Disease-Specific Health-Related Quality of Life Instruments: Part II Psychometric Properties

Poster Code: PCR54

Authors: Xue Li, Rui Li, Meixuan Li, Xu Hui, Jing Li, Liang Yao, Harriette Van Spall, Kun Zhao, Yunxiang Chen, Feiyi Xiao, Qiang Fu, Feng Xie

Background

- Health-related Quality of Life (HRQoL) instruments for cardiovascular disease (CVD) have been commonly used to measure important patient-reported outcomes in clinical trials and practices.
- This study aimed at systematically identifying and evaluating the psychometric properties of CVD-specific HRQoL instruments.

Methods

- We searched CINAHL, Embase, and PubMed from inception to January 20, 2022. Studies that reported psychometric properties of CVD-specific instruments were included.
- Two reviewers independently assessed the methodological quality using the Consensus-based Standards for the Selection of Health Measurement Instruments methods on evaluating measurement properties and quality of evidence.
- Seven psychometric properties, including structural validity, internal consistency, test-retest reliability, convergent validity, divergent validity, discriminative validity, and responsiveness, were evaluated.

Results and conclusions

- We identified 142 studies reporting psychometric properties of 40 instruments.
  - 5 (12.5%) instruments demonstrated measurement properties with “sufficient” or “inconsistent” ratings. 28 (70.0%) instruments did not report responsiveness or minimally important difference values.
  - Of the 40 instruments, 15 (37.5%) instruments were rated “sufficient” with high quality of evidence on internal consistency, 4 (10.0%) on structural validity, convergent validity and divergent validity and 3 (7.5%) on discriminative validity.
- When measuring patient-reported outcomes in clinical trials or routine practice, it is important to choose instruments with established psychometric properties.

Figure 3. Quality of measurement properties of CVD-specific instruments

Type of CVDs	Instrument (Abbr.)	Content validity	Structural validity	Internal consistency	Reliability	Construct validity: Convergent validity	Construct validity: Divergent validity	Construct validity: Discriminative validity	Responsiveness
Cardiovascular diseases	UBQ-H	±	NR	+	-	±	?	+	?
	CHP	+	?	+	?	?	NR	?	?
	MILQ	+	NR	+	+	?	?	NR	NR
Heart failure	CHPchf	±	NR	+	NR	±	NR	+	NR
	KCCQ	±	?	±	+	+	±	+	+
	CHAT	+	?	+	NR	±	NR	NR	NR
	QLQ-SHF	±	?	+	+	±	±	±	NR
	HFQOL	+	?	+	NR	NR	NR	NR	NR
	CHQ	±	+	+	+	+	?	+	+
	MLHFQ	±	+	±	+	+	+	+	±
	KAPQ-HF	+	?	-	+	NR	NR	+	NR
	CHF-PROM	+	-	+	NR	NR	NR	?	NR
	PROMIS-Plus-HF	±	-	-	+	+	+	?	?
Coronary artery disease (including ischemic heart disease, myocardial infarction and angina)	HeartQoL	±	±	+	+	+	+	+	±
	MIDAS	±	±	±	±	±	?	+	+
	QLMI	±	NR	-	?	+	±	-	?
	MacNew	±	±	+	±	+	±	+	+
	70-item questionnaire	+	NR	+	NR	NR	NR	+	NR
	SAQ	±	+	±	±	±	+	+	±
	ITG-CAD	±	?	+	NR	NR	?	?	NR
	QLICD-CHD	+	-	-	+	±	+	NR	?
Atrial fibrillation	QLAF	+	NR	+	+	NR	NR	NR	±
	AFEQT	±	±	+	±	+	±	±	±
	AF-QoL-18	±	?	+	+	?	?	+	?
	AF Impact	±	?	+	±	+	?	?	?
	AF-6	+	?	+	-	?	?	?	-
Arrhythmia (non-AF)	U22	±	-	+	NR	NR	NR	NR	?
	ASTA	±	+	+	NR	+	+	NR	NR
	PPAQ	+	?	+	NR	NR	NR	+	NR
Congenital heart disease	CTID-TAAQOL	+	?	+	NR	+	+	+	NR
	ACHD PRO	±	NR	+	+	+	NR	NR	?
Syndrome X	tionnaire for quality of life Syndro	±	NR	+	-	?	?	+	±
Ventricular dysfunction	LVD-36	±	NR	?	+	?	NR	?	?
Pacemaker patients	The Aquarel questionnaire	±	?	+	+	?	?	+	NR
Cardiac interventions	HSSI	±	NR	?	-	?	?	NR	NR
	ICD-QOL	+	NR	+	NR	?	?	NR	NR
	CROQ	±	?	±	±	±	+	±	+
	QOLVAD	+	-	-	?	±	NR	NR	NR
	TASQ	±	NR	±	+	±	-	NR	?
	QLCS	±	NR	+	-	NR	NR	?	?

Quality of evidence: High (green), Moderate (yellow), Low (orange), Very low (red).

Figure 4. Instruments contained most psychometric properties ranked as “sufficient” or “inconsistent” in different types of CVDs