

# Comparative performance of the EQ-5D-5L and EQ-HWB in Older Adults: Data from the EQ-DAPHNIE in the UK

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## Background

- Older individuals often face unique challenges related to physical health, mental well-being, and social interactions, profoundly impacting their overall well-being and quality of life. Consequently, there is an increasing demand for effective strategies to address the health and well-being of older adults, highlighting the need for robust measures that accurately capture these impacts on quality of life.
- The EQ-5D-5L is one of the most commonly used generic measures of health-related quality of life. Other measures, such as ICHOM-10, and elderly-specific measures, such as the OPQOL, are commonly used in older individuals. The EQ-HWB is a new experimental measure designed to capture well being.

## Aim

- This study evaluated how the EQ-5D-5L and EQ-HWB-Short compare with OPQOL-brief and PROMIS-10 in measuring health-related quality of life among older adults using data from the EQ-DAPHNIE survey in the UK.

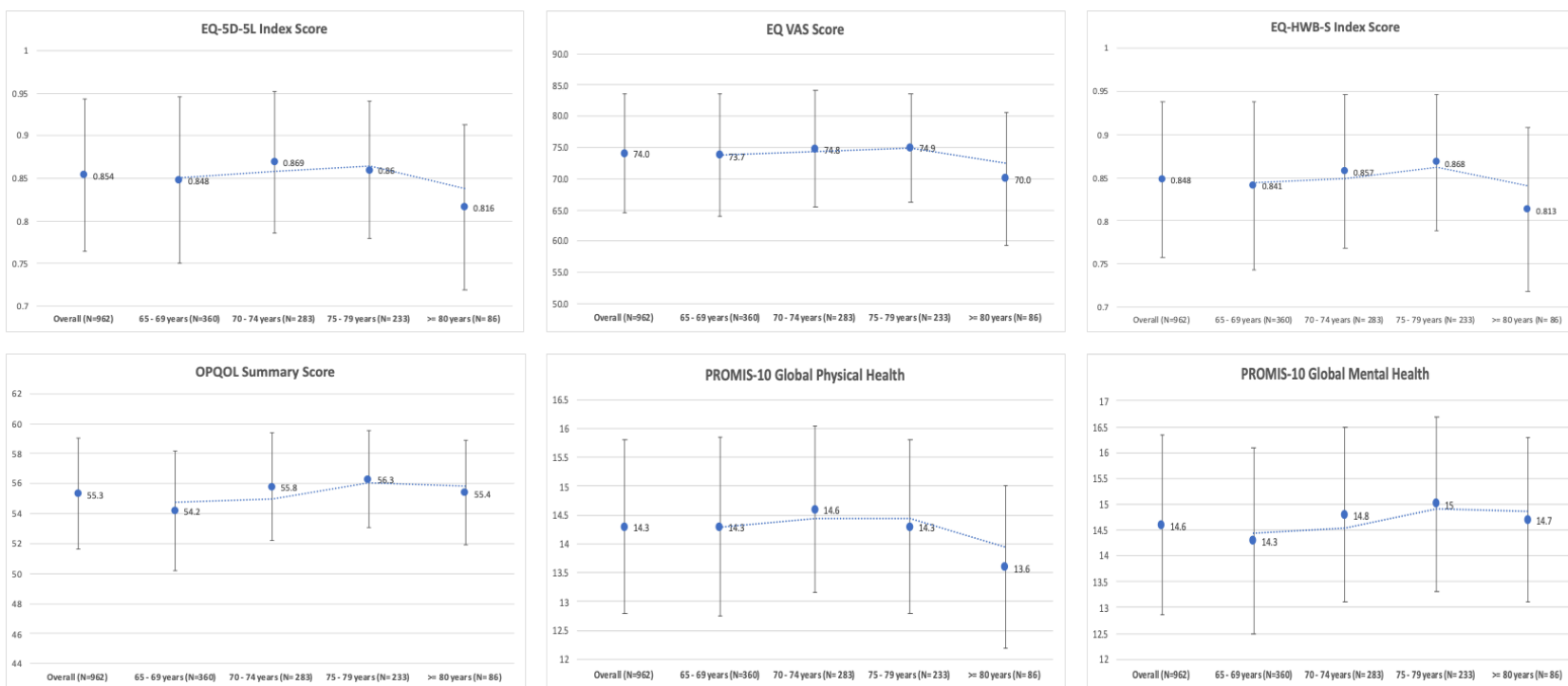
## Methods

- A total of 970 respondents aged 65 years or older were included, with descriptive analyses conducted overall and by age groups (65-69, 70-74, 75-79, ≥80). Additional analyses focused on respondents reporting EQ-5D-5L health state 11111 (n=258, 26.6%). Spearman correlations assessed convergent and divergent validity, and known-groups analysis examined discriminative validity.
- The EQ-DAPHNIE initiative, funded by the EuroQol Research Foundation, aims to create a multi-country database for evaluating EuroQol instruments and other health measures.
  - It recruited a representative sample of 4,500 adults across 15 countries, divided into two phases: Phase 1 (UK, US, Canada, Australia, New Zealand) and Phase 2 (Spain, Argentina, Chile, Mexico, Brazil, China, Japan, Germany, Netherlands, France).
  - Using multi-stage quota sampling based on age, gender, urbanity, and education, the survey features a modular format, translated and adapted for local contexts.
  - Key measures include EQ-5D-5L, EQ-HWB, ASCOT, WHO-5, PROMIS-10, OPQOL, PHQ-2, and GAD-2, alongside self-care behaviours, medical history, healthcare utilization, and socio-demographic factors.

## Results

- Respondents averaged 72.1 years of age, with 46.4% female.
- Mean scores included EQ-5D-5L index 0.855 (SD 0.179), EQ VAS 73.9 (18.9), EQ-HWB-S index score 0.848 (0.180) OPQOL-brief summary 55.2 (7.6), PROMIS-10 physical 46.5 (8.5), and mental 50.5 (9.3) health summary T-scores.
- While scores varied slightly across age groups, they generally increased from ages 65-69 to 75-79 years, declining at age 80+ years. Correlations demonstrated EQ-5D-5L index's strong association with EQ-HWB-Short index and PROMIS-10 physical score, and moderate associations with OPQOL-brief and PROMIS-10 mental scores. EQ-5D-5L dimensions correlated more strongly with EQ-HWB-Short and PROMIS-10 than OPQOL-brief items.
- Individuals with EQ-5D-5L health state 11111 reported significant exhaustion, loneliness, concentration difficulties, anxiety, depression, lack of control, and pain on the EQ-HWB-Short, and emotional problems and fatigue on the PROMIS-10.
- Discriminative ability was strongest amongst those with depression, kidney disease, obesity, and respiratory disease, and weaker in heart disease, diabetes, hypertension, and stroke.

Measures' summary scores overall and by age groups



Known-groups validity by chronic conditions

Effect size of difference	EQ-5D-5L index score	EQ-HWB-Short index score	EQ VAS	OPQOL total score
Diabetes	0.36	0.28	0.23	0.07
Heart disease	0.46	0.38	0.53	0.05
Hypertension	0.25	0.17	0.3	0.08
Obesity	0.71	0.75	0.66	0.39
Respiratory disease	0.45	0.46	0.57	0.21
Gastrointestinal disorders	0.54	0.58	0.38	0.23
Rheumatological disease	0.79	0.77	0.52	0
Musculoskeletal disorders	0.79	0.73	0.51	0.11
History of cancer	0.0	0.0	0.2	0.15
Sleep disorders	1.15	1.22	0.82	0.35
Migraine	0.3	0.4	0.21	0.04
Mental health disorders	1.03	1.19	0.59	0.6

Spearman correlations between measures' items and summary scores

EQ-5D-5L vs. OPQOL-Brief	MO	SC	UA	PD	AD	TSS	VAS	Index
QOL Global	0.41	0.35	0.46	0.42	0.45	0.55	-0.56	-0.56
Enjoy my life	0.30	0.33	0.35	0.31	0.44	0.43	-0.47	-0.44
Look forward to things	0.27	0.32	0.34	0.29	0.38	0.40	-0.41	-0.41
Healthy enough to get out and about	0.58	0.46	0.60	0.47	0.34	0.62	-0.56	-0.61
Family, friends or neighbors would help me if needed	0.16	0.17	0.17	0.13	0.25	0.21	-0.20	-0.22
Have social or leisure activities/hobbies	0.33	0.32	0.38	0.31	0.37	0.43	-0.42	-0.44
Try to stay involved with things	0.25	0.23	0.30	0.25	0.28	0.34	-0.32	-0.34
Healthy enough to have my independence	0.48	0.46	0.53	0.39	0.32	0.52	-0.50	-0.52
Please myself what I do	0.28	0.28	0.33	0.25	0.30	0.36	-0.34	-0.36
Feel safe where I live	0.24	0.24	0.26	0.21	0.29	0.31	-0.31	-0.32
Get pleasure from my home	0.23	0.22	0.26	0.21	0.27	0.31	-0.33	-0.33
Take life as it comes and make the best of	0.17	0.20	0.23	0.18	0.38	0.29	-0.30	-0.31
Feel lucky compared to most people	0.25	0.24	0.28	0.23	0.30	0.34	-0.37	-0.35
Have enough money to pay for household bills	0.26	0.21	0.27	0.23	0.30	0.34	-0.32	-0.34
OPQOL total score	-0.42	-0.40	-0.47	-0.38	-0.46	-0.54	0.53	0.55
EQ-5D-5L vs. PROMIS-10	MO	SC	UA	PD	AD	TSS	VAS	Index
Overall health	0.59	0.44	0.56	0.54	0.38	0.67	-0.73	0.66
Overall quality of life	0.44	0.40	0.47	0.40	0.47	0.56	-0.60	0.57
Physical health	0.59	0.44	0.60	0.54	0.37	0.68	-0.71	0.67
Mental health	0.23	0.27	0.29	0.26	0.62	0.42	-0.44	0.45
Social activities	0.31	0.30	0.36	0.28	0.46	0.43	-0.48	0.45
Usual activities/roles	0.49	0.43	0.54	0.45	0.45	0.60	-0.58	0.60
Physical functioning	0.75	0.56	0.75	0.62	0.31	0.76	-0.61	0.75
Emotional problems	0.24	0.25	0.27	0.31	0.66	0.46	-0.38	0.49
Fatigue	0.50	0.39	0.51	0.49	0.43	0.60	-0.52	0.60
Pain	0.60	0.41	0.59	0.80	0.32	0.76	-0.58	0.67
Physical summary score	-0.70	-0.48	-0.69	-0.70	-0.38	-0.82	0.72	0.80
Mental summary score	-0.35	-0.35	-0.40	-0.37	-0.64	-0.55	0.56	0.57
EQ-5D-5L vs. EQ-HWB-Short	MO	SC	UA	PD	AD	TSS	VAS	Index
Difficulty getting around inside and outside	0.72	0.59	0.70	0.56	0.27	0.68	-0.50	-0.66
Difficulty doing day to day activities	0.70	0.58	0.77	0.60	0.32	0.72	-0.55	-0.70
No control over day to day life	0.35	0.39	0.43	0.33	0.45	0.46	-0.38	-0.47
Trouble concentrating	0.24	0.28	0.32	0.28	0.46	0.40	-0.33	-0.41
Feeling anxious	0.26	0.28	0.31	0.28	0.70	0.46	-0.36	-0.49
Feeling sad/depressed	0.25	0.27	0.31	0.29	0.68	0.45	-0.37	-0.48
Feeling lonely	0.24	0.23	0.25	0.24	0.45	0.35	-0.31	-0.36
Feeling exhausted	0.45	0.35	0.49	0.47	0.42	0.57	-0.45	-0.56
Physical pain severity	0.59	0.41	0.56	0.82	0.27	0.74	-0.50	-0.72
HWB-S index score	-0.66	-0.49	-0.68	-0.70	-0.52	-0.84	0.61	0.83

## Conclusions

While the EQ-5D-5L effectively captures physical health, pain, and mental health aspects of HRQL in older adults, it may overlook aspects of broader quality of life dimensions such as social functioning, relationships, coping abilities, independence, sleep, memory, vision, hearing, safety, hope, and financial stability, some of which are captured by the EQ-HWB-Short. The OPQOL-brief failed to capture physical and mental aspects of HRQL. These results offer insights into which instruments should be used individually or alongside each other to facilitate assessment of particular constructs of QoL in older populations.

