

Comparative Performance of the EQ-5D-5L and PROMIS-10 in the Elderly: *Data from the EQ-DAPHNIE Project in Five Countries*

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EQ-DAPHNIE Initiative



Cross-sectional survey design

- Option for longitudinal follow-up of a subset
- Possible serial panels with biennial/triennial frequency



Sampling frame

- General adult population
- N=4500 per country
- Sampling quotas based on age, sex, income, region (urban/rural), and first language



Multiple countries

- Round 1: UK, US, Canada, New Zealand, Australia
- Round 2: Argentina, Chile, Mexico, Brazil, China, Japan, Spain, France, Germany, Netherlands
- Round 3: TBD



Data collection by web-based survey

- Maths in Health contracted to create data collection infrastructure (LimeSurvey, data collection tools)
- Dynata contracted for participant panels



Core questionnaire + country-specific additions

- Possible additional condition-specific modules for countries / PIs

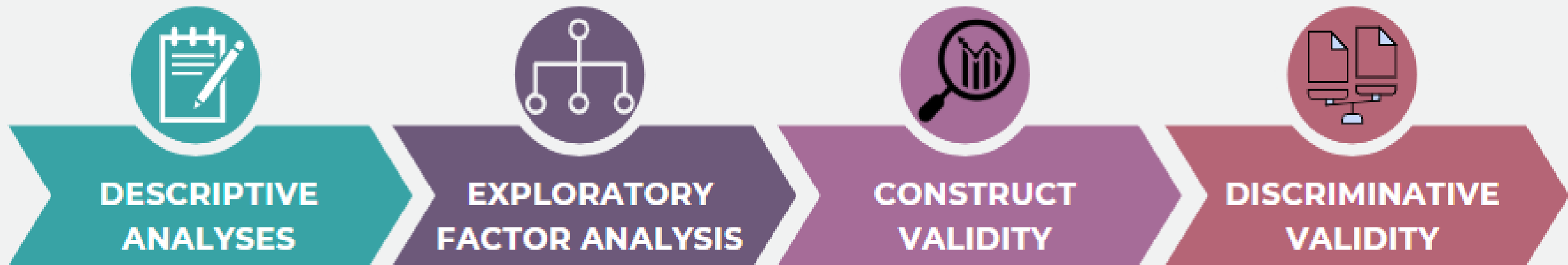
Objective

EQ-5D-5L vs. PROMIS-10



Methods

- Data from the EQ-DAPHNIE project were used.
- A total of 5399 respondents aged 65 years or older were included from Canada (n=1312), US (n=1067), UK (n=970), Australia (n=1223), New Zealand (n=827).



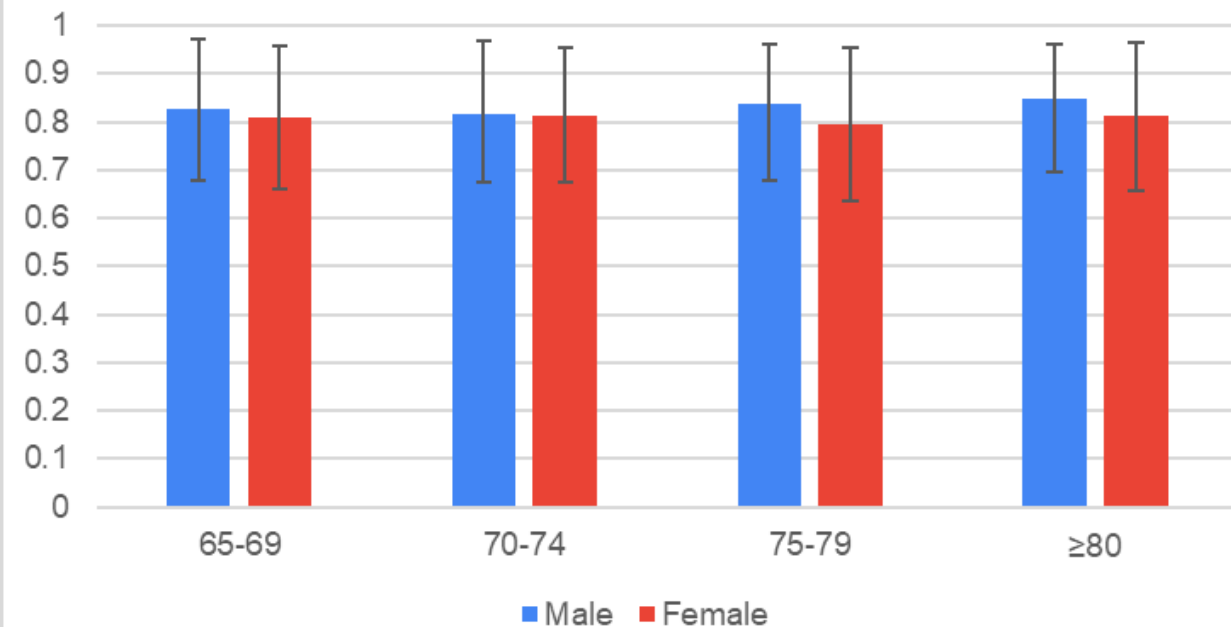
Mean EQ-5D-5L & PROMIS-10 summary scores by country:

Best scores were reported in the UK and New Zealand; worst scores were reported in Canada and Australia.

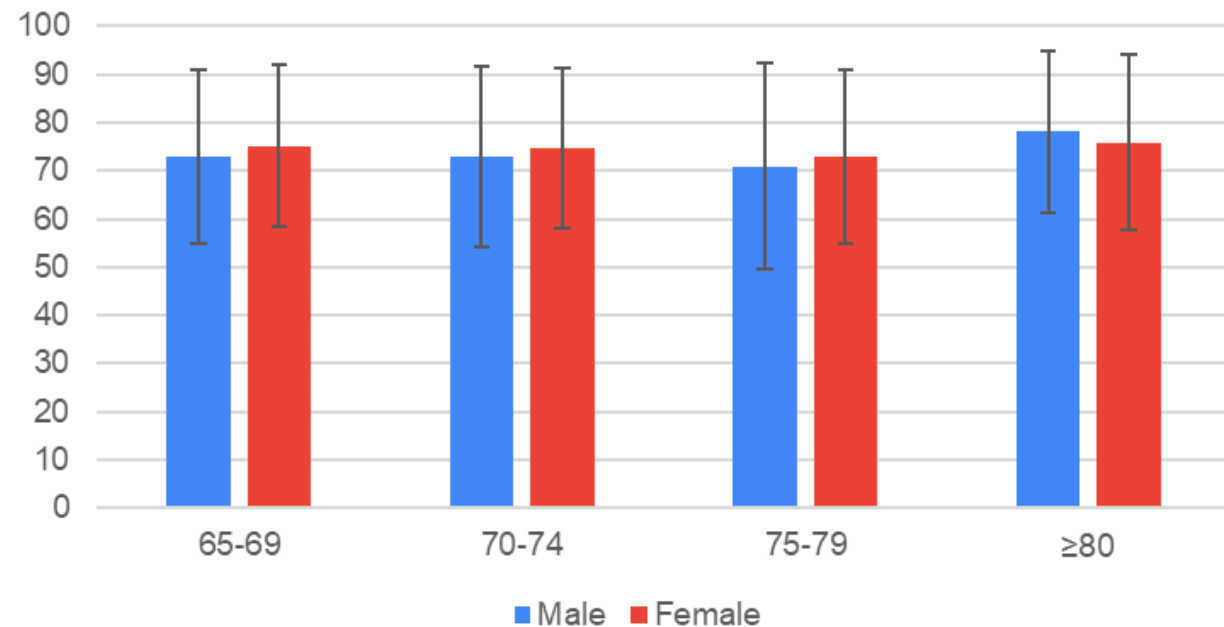


EQ-5D-5L summary scores by age and sex in Canada 🇨🇦

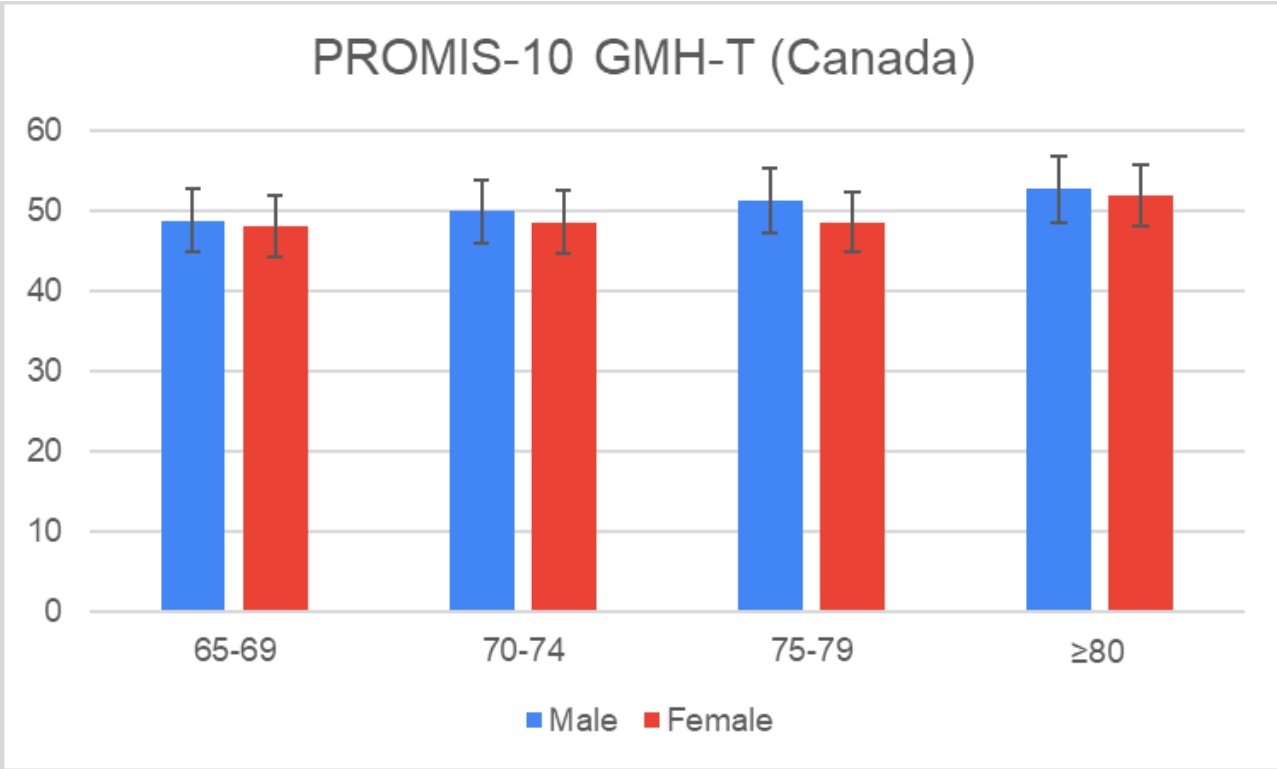
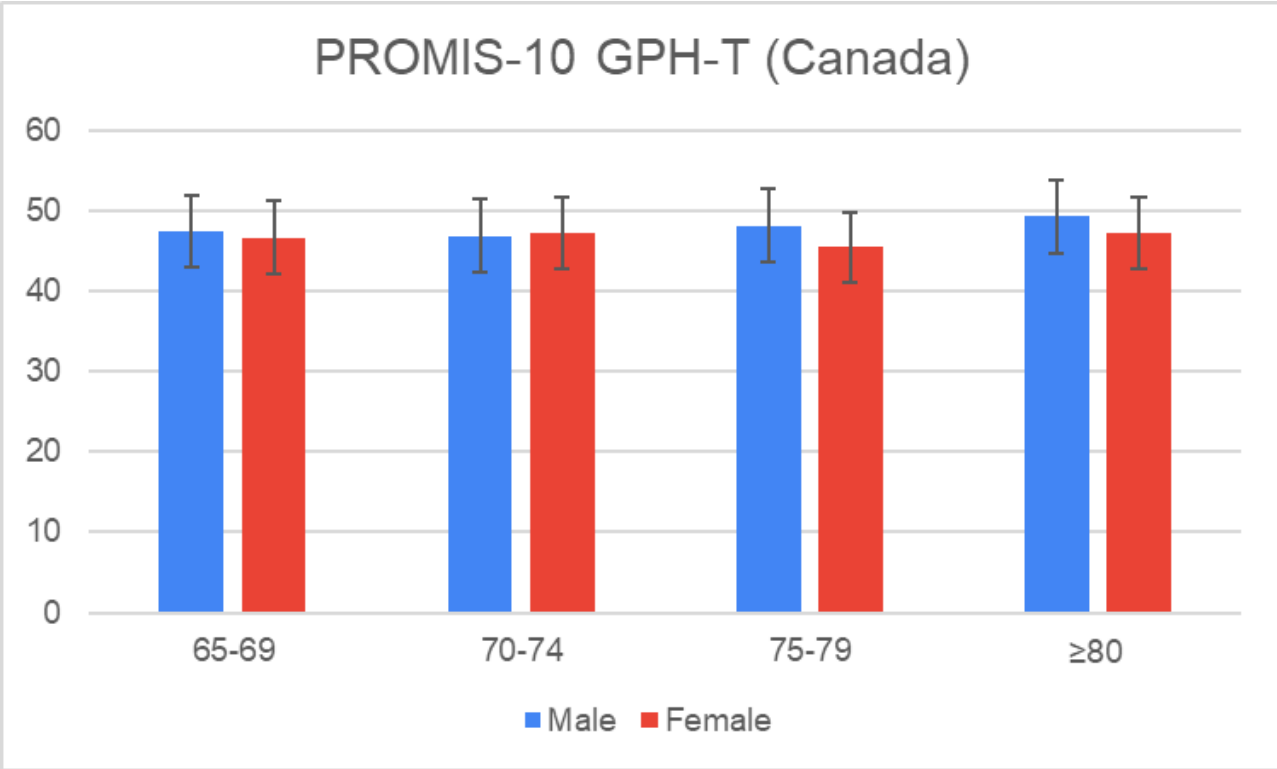
EQ-5D-5L index (Canada)



EQ-VAS (Canada)



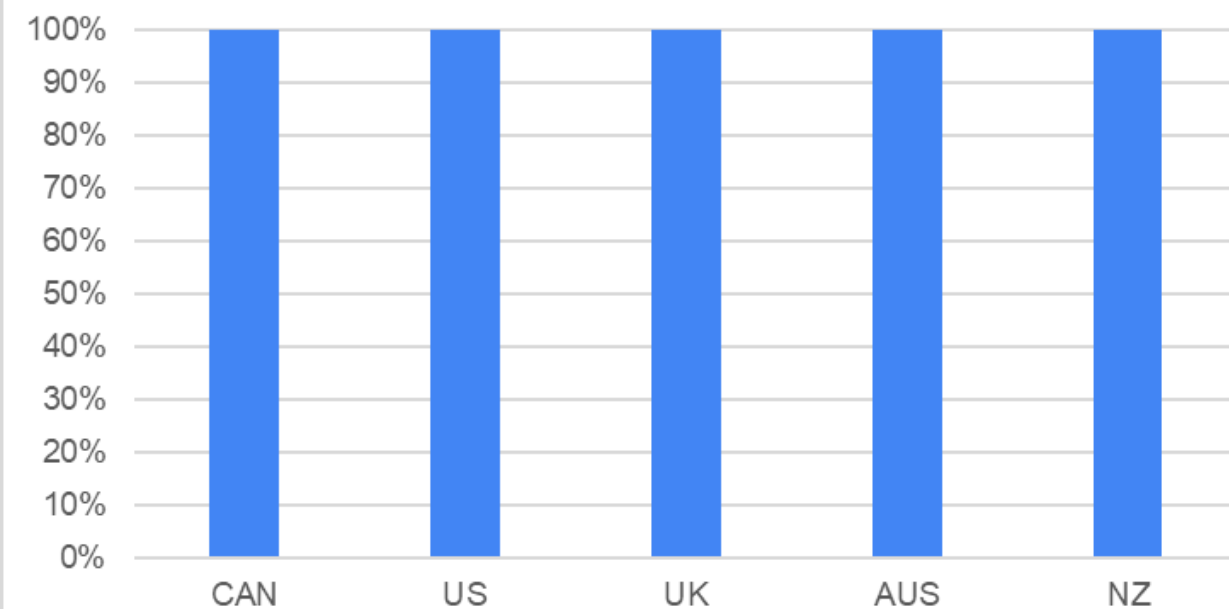
PROMIS-10 summary scores by age and sex in Canada 🇨🇦



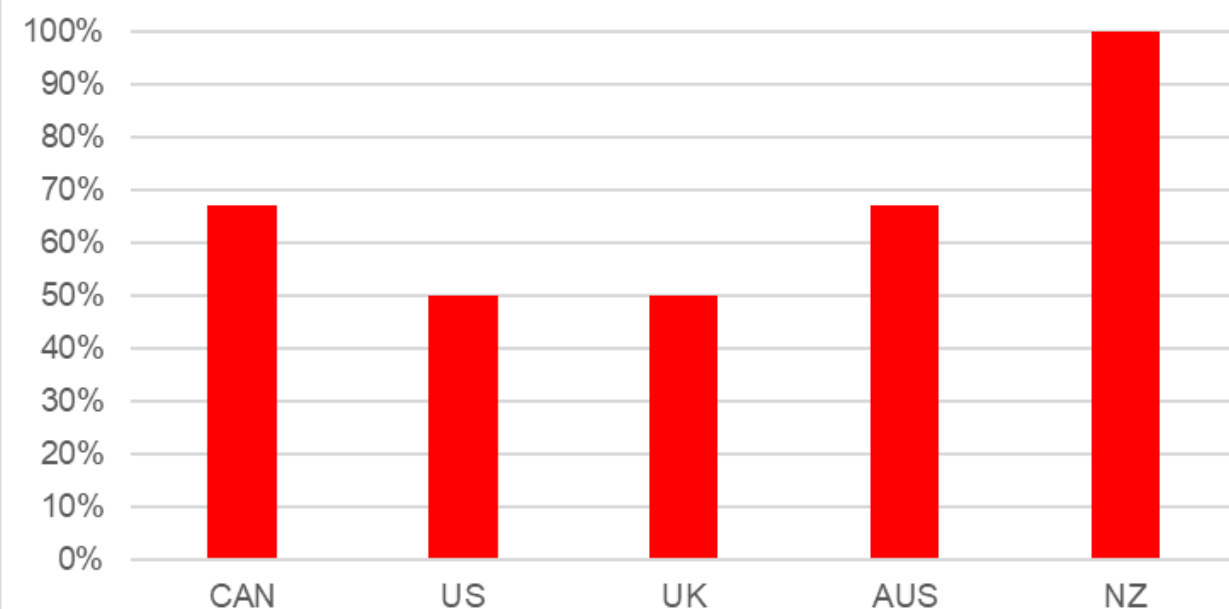
Percentage of a-priori hypotheses confirmed by country:

Both EQ-5D-5L and PROMIS-10 showed good construct validity in all five countries.

Percentage of Convergent Validity Hypotheses (n=6)
Confirmed



Percentage of Divergent Validity Hypotheses (n=6)
Confirmed



	CAN	US	UK	AUS	NZ		CAN	US	UK	AUS	NZ
Diabetes						Sleep disorders					
ES (index)	0.93	1.02	0.87	0.85	1.01	ES (index)	1.25	1.38	1.75	1.15	1.12
ES (VAS)	0.98	1.16	0.80	0.97	1.06	ES (VAS)	1.19	1.49	1.41	1.11	1.17
ES (LSS)	1.06	1.15	1.00	0.93	1.19	ES (LSS)	1.44	1.58	2.00	1.32	1.32
ES (GPH-T)	1.12	1.30	1.26	1.18	1.54	ES (GPH-T)	1.49	1.82	2.05	1.47	1.48
ES (GMH-T)	0.64	0.89	0.53	0.66	0.96	ES (GMH-T)	1.06	1.07	1.40	1.00	1.26
Heart disease						Migraine					
ES (index)	1.09	1.32	1.05	0.85	0.97	ES (index)	1.53	1.42	1.04	1.12	0.95
ES (VAS)	1.06	1.53	1.06	1.04	1.02	ES (VAS)	1.12	1.36	0.85	1.21	0.84
ES (LSS)	1.24	1.51	1.19	0.95	1.14	ES (LSS)	1.67	1.59	1.09	1.24	1.09
ES (GPH-T)	1.30	1.80	1.31	1.07	1.39	ES (GPH-T)	1.47	1.58	1.10	1.35	1.10
ES (GMH-T)	0.71	1.08	0.64	0.56	0.75	ES (GMH-T)	0.94	0.85	0.62	0.85	0.89
Hypertension						Mental health disorders					
ES (index)	0.80	0.73	0.65	0.62	0.73	ES (index)	1.23	1.29	1.12	1.03	1.01
ES (VAS)	0.76	0.81	0.72	0.68	0.77	ES (VAS)	0.99	1.25	1.00	1.02	1.04
ES (LSS)	0.92	0.83	0.73	0.70	0.85	ES (LSS)	1.46	1.51	1.30	1.21	1.21
ES (GPH-T)	0.97	1.03	0.96	0.88	1.04	ES (GPH-T)	1.36	1.71	1.42	1.29	1.31
ES (GMH-T)	0.55	0.59	0.52	0.51	0.75	ES (GMH-T)	1.26	1.46	1.37	1.31	1.57
Obesity						Anxiety					
ES (index)	1.29	1.24	1.44	1.45	1.24	ES (index)	1.35	1.51	1.28	1.25	1.23
ES (VAS)	1.12	1.29	1.24	1.36	1.33	ES (VAS)	1.08	1.29	1.14	1.27	1.14
ES (LSS)	1.53	1.49	1.64	1.60	1.53	ES (LSS)	1.60	1.74	1.47	1.45	1.46
ES (GPH-T)	1.51	1.63	1.61	1.64	1.77	ES (GPH-T)	1.46	1.80	1.52	1.44	1.65
ES (GMH-T)	0.95	0.92	0.82	0.96	1.08	ES (GMH-T)	1.39	1.66	1.49	1.52	1.77
Respiratory disease						Depression					
ES (index)	1.33	1.24	0.98	0.90	1.07	ES (index)	1.37	1.43	1.21	1.16	1.03
ES (VAS)	1.21	1.36	1.07	1.01	1.06	ES (VAS)	1.08	1.41	1.10	1.09	1.10
ES (LSS)	1.56	1.42	1.16	1.04	1.28	ES (LSS)	1.61	1.66	1.40	1.34	1.23
ES (GPH-T)	1.59	1.65	1.36	1.26	1.43	ES (GPH-T)	1.49	1.83	1.51	1.38	1.30
ES (GMH-T)	0.97	0.95	0.71	0.70	0.90	ES (GMH-T)	1.43	1.49	1.47	1.34	1.71
Gastrointestinal disorders						Osteoporosis					
ES (index)	1.37	1.32	1.05	1.20	1.15	ES (index)	1.23	1.01	1.42	0.94	1.10
ES (VAS)	1.11	1.28	0.95	1.11	1.04	ES (VAS)	0.94	1.03	1.17	0.90	1.17
ES (LSS)	1.57	1.45	1.21	1.29	1.34	ES (LSS)	1.44	1.12	1.64	1.07	1.35
ES (GPH-T)	1.47	1.39	1.30	1.33	1.59	ES (GPH-T)	1.26	1.17	1.79	1.12	1.62
ES (GMH-T)	1.08	0.96	0.94	0.89	1.31	ES (GMH-T)	0.77	0.74	1.06	0.58	1.12
Rheumatoid Arthritis						Thyroid disease					
ES (index)	1.58	1.75	1.41	1.14	1.26	ES (index)	1.09	1.02	0.97	0.94	0.97
ES (VAS)	1.16	1.49	1.11	1.03	0.96	ES (VAS)	0.75	1.04	0.96	0.89	0.81
ES (LSS)	1.74	1.95	1.59	1.28	1.39	ES (LSS)	1.17	1.12	1.03	1.02	1.07
ES (GPH-T)	1.51	1.73	1.55	1.30	1.29	ES (GPH-T)	1.01	1.24	1.12	1.07	1.48
ES (GMH-T)	0.89	0.91	0.89	0.69	0.91	ES (GMH-T)	0.57	0.70	0.59	0.68	0.99
Muskuloskeletal disorders						Skin disease					
ES (index)	1.82	1.88	1.57	1.49	1.40	ES (index)	1.58	1.44	1.32	0.93	0.87
ES (VAS)	1.42	1.53	1.09	1.35	1.33	ES (VAS)	1.16	1.32	1.00	0.72	0.86
ES (LSS)	2.22	2.17	1.91	1.70	1.62	ES (LSS)	1.68	1.65	1.38	1.04	1.01
ES (GPH-T)	1.73	1.79	1.83	1.61	1.88	ES (GPH-T)	1.30	1.38	1.18	0.90	1.01
ES (GMH-T)	0.92	1.02	0.80	0.82	1.06	ES (GMH-T)	0.89	0.73	0.85	0.69	0.73

Effect sizes of the 16 diseases in which discriminatory performances were examined.

Cutoff: 0.2-0.5 small, 0.5-0.8 moderate, >0.8 large

All scores on both measures perform well across countries in all diseases, hypertension less so but still moderate-to-strong.

Conclusion

- Both EQ-5D-5L and PROMIS-10 effectively capture HRQL in older adults across five English-speaking countries. They were also able to distinguish well between healthy individuals and individuals with chronic conditions, as well as individuals with multiple chronic conditions.
- Choice of which measure to use in this population should be informed by the use, length of the measure, and the need for a single summary score and/or a utility score.

Acknowledgments



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