Multi-Instrument Comparison of Measures of Health-Related Quality of Life in Children Aged 2-4 Years Old

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BACKGROUND

- Few valid preference-weighted HRQoL measures are available for children aged <5
- EQ-5D-Y (3L & 5L) was adapted through qualitative research, for use in children aged 2-4 years and showed better performance than the original EQ-5D-Y
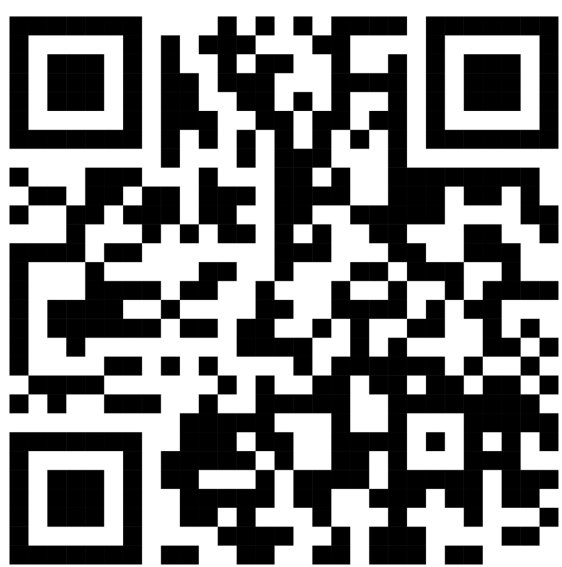
AIMS

To compare the psychometric performance of the adapted EQ-5D-Y-3L (Y-3L), adapted EQ-5D-Y-5L (Y-5L), CHU9D and HUI2/3

METHODS

Dataset: QUOKKA Australian Paediatric Multi-Instrument Comparison **(P-MIC)** dataset

RESULTS

Table 1: Cohen's D Known Group effect sizes of the adapted EQ-5D-Y-3L/5L, CHU9D and HUI2/3

Group	Adapted EQ-5D-Y-3L N	Adapted EQ-5D-Y-3L ES	Adapted EQ-5D-Y-5L N	Adapted EQ-5D-Y-5L ES	CHU9D N	CHU9D ES	HUI2/3 N	HUI2/3 ES
Child SHCNs	227	**1.03*****(0.85 – 1.21)	216	**1.01*****(0.83 – 1.19)	279	**0.85*****(0.69 – 1.00)	115	**1.12*****(0.89 – 1.33)
No SHCNs	345		362		563		419	
Poor/fair/good	139	**1.14*****(0.94 – 1.35)	152	**1.02*****(0.82 – 1.21)	200	**1.01*****(0.84 – 1.17)	109	0.69***(0.48 – 0.91)
Very good/ Excellent	433		426		642		425	
Healthy	214		192		304		202	
Asthma	74	**0.87*****(0.59 – 1.14)	79	**0.80*****(0.53 – 1.07)	108	**0.88*****(0.65 – 1.11)	63	0.59**(0.31 – 0.88)
ADHD	37	**1.38*****(1.01 – 1.75)	33	**1.23*****(0.84 – 1.62)	64	**1.61*****(1.32 – 1.90)	58	**1.14*****(0.83 – 1.45)
Autism	38	**2.90***** (2.47 – 3.33)	39	**2.31*****(1.91 – 2.72)	54	**2.27*****(1.93 – 2.60)	31	**2.25*****(1.81 – 2.68)
Behavioural problems	55	**2.16*****(1.81 – 2.51)	72	**1.89*****(1.57 – 2.21)	98	**2.06*****(1.79 – 2.32)	69	**1.37*****(1.07 – 1.67)
Developmental delay	71	**2.34*****(2.00 – 2.67)	78	**2.08*****(1.76 – 2.40)	96	**1.81*****(1.55 – 2.08)	43	**2.11*****(1.73 – 2.50)
Eczema	98	**0.79*****(0.54 – 1.04)	121	**0.71*****(0.48 – 0.95)	149	**0.80*****(0.60 – 1.00)	79	0.66***(0.40 – 0.93)
Food allergy	63	**0.93*****(0.64 -1.22)	67	**0.90*****(0.61 – 1.19)	84	**0.91*****(0.66 – 1.16)	38	**0.82****(0.47 – 1.18)
Sleeping problems	111	**1.14*****(0.89 – 1.39)	113	**1.19*****(0.93 – 1.44)	190	**1.35*****(1.15 – 1.55)	156	0.68***(0.47 – 0.90)

Special healthcare needs (SCHN), total score (TS), level sum score (LSS). Cohen's D effect size (ES) thresholds 0.2-0.49, 0.5-0.79, >0.8 = small, medium, and large ES. **Bold**= large ES * = $P < 0.05$, ** = $P < 0.01$, *** $P < 0.001$

KEY FINDINGS

1. Effect size for adapted Y-3L, Y-5L and CHU9D are all large for all known groups (Table 1)
2. ~5% reported difficulty for all instruments
3. High ceiling effect for adapted Y-3L/Y-5L and HUI2/3 – removed in sub-sample of children with poor health
4. Adapted Y-3L and Y-5L had largest intraclass correlation coefficients (large effect size) for test-retest reliability
5. All instruments respond in correct directions for responsiveness (small effect sizes)

CONCLUSION

- **The adapted EQ-5D-Y-3L/5L and CHU9D showed overall good (similar) psychometric performance**
- **The HUI2/3 performed poorly for almost all known-groups compared to the other instruments**