

An Empirical Comparison of EQ-5D-Y-5L and EQ-5D-Y-3L Questionnaires

Mina Bahrapour¹, Nancy Devlin², Brendan Mulhern¹

¹ University of Technology Sydney, Sydney, NSW, Australia
² University of Melbourne, Melbourne, VIC, Australia



OBJECTIVES

EQ-5D-Y is a generic health related quality of life (HRQoL) measure suitable for children and adolescents. This measure has five dimensions; “mobility”, “looking after self”, “doing usual activities”, “pain” and “feeling worried sad or unhappy”. There are two versions of the instrument that differ in terms of response levels; a three (EQ-5D-Y-3L) (Y-3L) and a five level (EQ-5D-Y -5L) (Y-5L).

Y-3L	Y-5L
No problems	No problems
Some problems	A little of problems
	Some problems
	A lot of problems
A lot of problems	Totally unable/Extremely serious

The Y-5L has been developed to improve the psychometric performance of the Y-3L. This study aims to assess the psychometric properties of Y-5L and to compare the performance of Y-5L and Y-3L in proxy and self-report.

METHODS

Both versions of the instrument were administered to children/adolescents (self-report) or caregivers (proxy-report) from the Australian population. The data used were from the first cut, May 2022, of Australian Paediatric Multi-Instrument Comparison Study (P-MIC) [1, 2].

The Y-5L and Y-3L were compared in terms of acceptability, informativity and validity.

- Acceptability was evaluated by comparing the ceiling effects; Ceiling effect is defined as the proportion of “no problem” responses in each item in all dimensions.
- Informativity was assessed using Shannon index; the index shows the information distribution which is estimated by the diversity of replies within each dimension.
- Validity was estimated using spearman correlation.
- Sankey’ diagrams were used to show the level distribution of the EQ-5D-3L with corresponding level for the EQ-5D-5L.

As a key comparison point was performance across self and proxy report, all the analysis were done in both proxy and self-report.

RESULTS

A total of 5444 surveys were completed for children aged 5 to 18 years either by the child or their proxy. 1919 of the surveys were completed by proxies and 3525 surveys were self reported. When comparing the proxy and self report data from Y-3L and Y-5L, there is some difference in the ceiling effect and Informativity between the two versions in both groups.

Ceiling effect was lower for the Y-5L in both groups compared to Y-3L; Also it was slightly higher in the proxy reports compare to self report. Ceiling effect was higher in the proxy group for both systems.



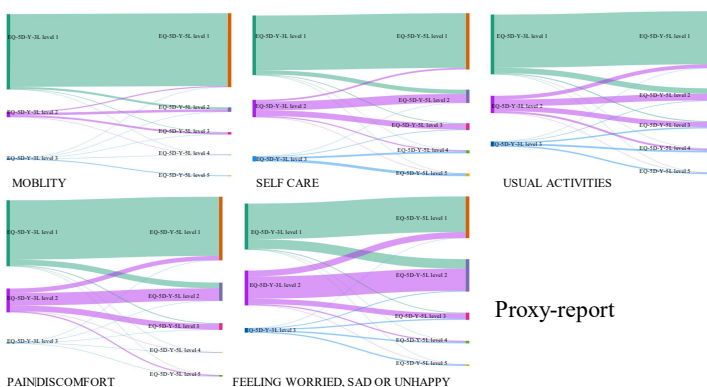
RESULTS

In both groups, items from same domains show a strong correlation. Strong correlation is suggested as correlations more than 0.5. Correlation between different dimensions is low to moderate. Correlation between same dimensions of Y-3L and Y-5L is slightly higher in the proxy reports except for “feeling worried, sad or unhappy”.

Dimensions	Walk around	Looking after Themselves	Usual activities	Pain	feeling worried, sad or un-happy
Self complete	0.676	0.733	0.663	0.684	0.655
Proxy report	0.745	0.841	0.737	0.708	0.654

Regarding informativity, Y-5L version has more discriminatory power, with a slightly higher Shannon diversity index in all dimensions of the Y-5L compared to the Y-3L.

Sankey’ diagrams show the distribution of level between Y-3L and Y-5L. The graphs show the for each level of the EQ-5D-3L the corresponding level for the EQ-5D-5L.



Proxy-report

In both groups, the domain “feeling worried, sad and unhappy” has more distribution in levels .



Self-report

CONCLUSIONS

Our results suggest Y-5L is comparable in terms of validity to the Y-3L; however there are some minor differences in the ceiling effect and informativity between the Y-3L and Y-5L versions.

Proxies and children respond to the instruments differently; Therefore these differences need to be considered when selecting measures to estimate HRQoL in children and adolescents.

Next steps for this research will be to use the results of this study and plan a mapping study from 3L to 5L version.

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 [2] Australian Paediatric Multi-Instrument Comparison (P-MIC) Study: Technical Methods Paper Version 1, Data Cut 1, 06 May 2022: https://www.quokkaresearchprogram.org/_files/ugd/ca8836_9b1a5d92b8ce4a089159522e5d3e8903.pdf