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Title: A direct comparison of the measurement properties of EQ-5D-5L, PROMIS-29+2 and PROMIS Global Health instruments and EQ-5D-5L and PROPr utilities in a general population sample
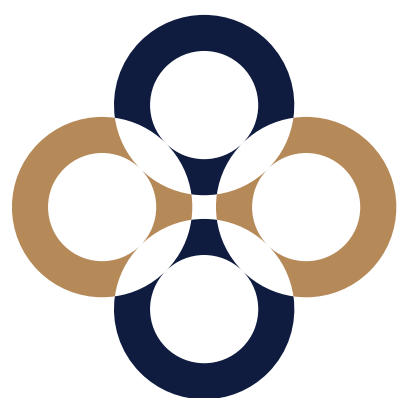
Abstract:

Objectives: We aimed to compare measurement properties of the 5-level version of EQ-5D (EQ-5D-5L) and PROMIS-29+2 and PROMIS-GH-10, and of EQ-5D-5L and PROMIS-preference scoring system (PROPr) utilities.

Methods: A cross-sectional survey was conducted in a general population sample in Hungary (N = 1631). We compared the following measurement properties at the level of items, domains, and utilities: ceiling and floor, informativity, agreement, convergent, and known-group validity.

Results: The majority of PROMIS items showed enhanced distributional characteristics, including lower ceilings and higher informativity than the EQ-5D-5L. Good convergent validity was established between EQ-5D-5L and PROMIS domains capturing similar aspects of health. Mean EQ-5D-5L utilities were substantially higher than those of PROPr (0.864 vs 0.535). EQ-5D-5L utilities correlated moderately or strongly with PROPr (r = 0.61), PROMIS-GH-10 physical (r = 0.68), and mental health summary scores (r = 0.53). EQ-5D-5L utilities discriminated significantly better in 12/28 (ratio of F-statistics) and 18/26 (AUROC ratio) known groups defined by age, self-perceived health status, and self-reported physician-diagnosed health conditions.

Conclusions: This study provides comparative evidence on the measurement properties of EQ-5D-5L, PROMIS-29+2, and PROMIS-GH-10 and informs decisions about the choice of instruments in population health surveys for assessment of patients' health and for cost-utility analyses.

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