

Estimating Severity Thresholds for PROMIS Global-10 Summary Scores among Community Dwelling and Recently Hospitalized Adults with Multiple Chronic Conditions

Maria O Edelen^{1,2}, Ron D Hays³, Patricia M Herman⁴, Anuj K Dalal²

¹RAND Corporation, Boston, USA. ²Brigham and Women's Hospital, Boston, USA. ³UCLA Department of Medicine, Los Angeles, USA. ⁴RAND Corporation, Santa Monica, USA

Objective

Previous research established thresholds across 5 severity groupings from Poor to Excellent for PROMIS® Global-10 Profile mental and physical health related quality of life scores based on the general US adult population. Developed to facilitate clinical interpretation, their generalizability to clinical samples is not established. This study estimates Global-10 mental and physical health score thresholds for two adult clinical samples with multiple chronic conditions (MCC) and compares them to those for the US adult population.

Methods

- Sample 1 (N=340) was drawn from a study of adult (>=21 years) MCC patients admitted to a major tertiary care hospital between 2/22 and 9/23.
- Sample 2 (N=1013) was a subset of older adults (>= 60) with back pain and at least one other CC drawn from a study that included a large probability-based internet panel.
- We grouped respondents into 5 severity groups based on their response to item Global01 “In general, would you say your health is: (5=Excellent – 1=Poor)” and calculated mean Global-10 mental and physical summary scores for each severity group.
- Thresholds were derived as the mean score mid points between each adjacent severity category for each sample and compared with the general adult population

KEY TAKEAWAY

Severity thresholds for Global-10 summary scores estimated from clinical samples overlap with those estimated for the US general population, but there are important differences, especially those recently hospitalized.

Results

Figure 1. Severity Thresholds for PROMIS Global-10 Physical (1a) and Mental (1b) Health Summary Scores for US General Adult Population (PROMIS) and Two Adult Clinical Samples.

Figure 1a

General Physical T-score	Hospital Sample	US General Population (PROMIS)	Community Sample
67.7	excellent	excellent	excellent
61.9	excellent	excellent	excellent
57.7	excellent	excellent	excellent
54.1	excellent	very good	very good
50.8	excellent	good	very good
47.7	excellent	good	good
44.9	very good	good	good
42.3	good	fair	fair
39.8	good	fair	fair
37.4	fair	fair	fair
34.9	fair	poor	poor
32.4	fair	poor	poor
29.6	poor	poor	poor
26.7	poor	poor	poor
23.5	poor	poor	poor
19.9	poor	poor	poor
16.2	poor	poor	poor

- Physical health thresholds were close between the general population and community dwelling sample, but among the hospitalized patient cohort, those with lower physical health scores tended to characterize themselves as having better overall health
- Mental health threshold correspondence was closer, but both samples trended toward higher overall health for lower mental health scores

Table 1. Sample Characteristics

	Hospital Sample (N=340)	Community Sample (N=1013)
Male (%)	41	50
White (%)	66	77
Chronic Conditions [M(SD)]	5.4 (2.2)	3.1 (1.3)
General health (%)		
Excellent	4.1	2.6
Very good	8.8	28.8
Good	20.6	45.7
Fair	39.4	18.6
Poor	27.1	4.3

Figure 1b

General Mental T-score	Hospital Sample	US General Population (PROMIS)	Community Sample
67.6	excellent	excellent	excellent
62.5	excellent	excellent	excellent
59	excellent	excellent	excellent
56	excellent	very good	excellent
53.3	excellent	very good	very good
50.8	very good	good	very good
48.3	very good	good	good
45.8	good	good	good
43.5	good	fair	fair
41.1	fair	fair	fair
38.8	fair	poor	fair
36.3	poor	poor	poor
33.8	poor	poor	poor
31.3	poor	poor	poor
28.4	poor	poor	poor
25.1	poor	poor	poor
21.2	poor	poor	poor

NOTE: Hospital Sample: Adults with multiple chronic conditions admitted to Brigham and Women's Hospital, Boston MA USA between 2/22 and 9/23
 Community Sample: Adults age 60 and older with chronic back pain and at least one other chronic conditions from a study of that used a large probability-based US internet panel
 US General Population (PROMIS): Published data from <https://www.healthmeasures.net/> accessed June 2024. Cut points have subsequently been updated for mental health: <https://www.healthmeasures.net/score-and-interpret/interpret-scores/promis/promis-score-cut-points/promis-adult-score-cut-points>

This work was funded by grants from AHRQ (1R01 HS28662-01, Dalal PI) and NCCIH (1R01AT010402, Herman, Hays PIs)

Acknowledgements