

Meaningful Change Estimates of Different PROMIS Short Forms within Domains Do Not Differ

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Background

- ❖ Estimation of meaningful change is required to interpret PROMIS scores.
- ❖ Though overall guidance for meaningful change thresholds has been offered, it is not clear if different PROMIS short forms within domains yield different meaningful change estimates.

Methods

- ❖ We used data from a prospective, observational study of 1828 cancer patients. Each participant was surveyed at a baseline timepoint and 6 weeks later on several PROMIS domains that each included 2-3 short forms of differing lengths: Anxiety, Depression, Ability to Participate in Social Roles and Activities (APSRA), Sleep Disturbance, and Fatigue.
- ❖ We used domain-specific patient global impression of change (PGIC) anchors with categories of “A lot better,” “A little better,” “About the same,” or “A little worse,” and “A lot worse”.
- ❖ Meaningful change thresholds for both categories of improvement and worsening were estimated with the median change and predictive modelling approaches.

Domain Short Forms & Lengths

| Domain | Short Forms |
|-------------------|-------------|
| Anxiety | 4a, 6a, 8a |
| Depression | 4a, 6a, 8a |
| APSRA | 4a, 6a, 8a |
| Sleep Disturbance | 4a, 6a, 8a |
| Fatigue | 7a, custom |

Median Change Thresholds for A Little & A Lot Worse

| Domain | Threshold(s) |
|-------------------|--------------|
| Anxiety | 4-5, 11-12 |
| Depression | 6-7, 11-12 |
| APSRA | 4-5, 9-10 |
| Sleep Disturbance | 5, 12 |
| Fatigue | 5, 10 |

Results

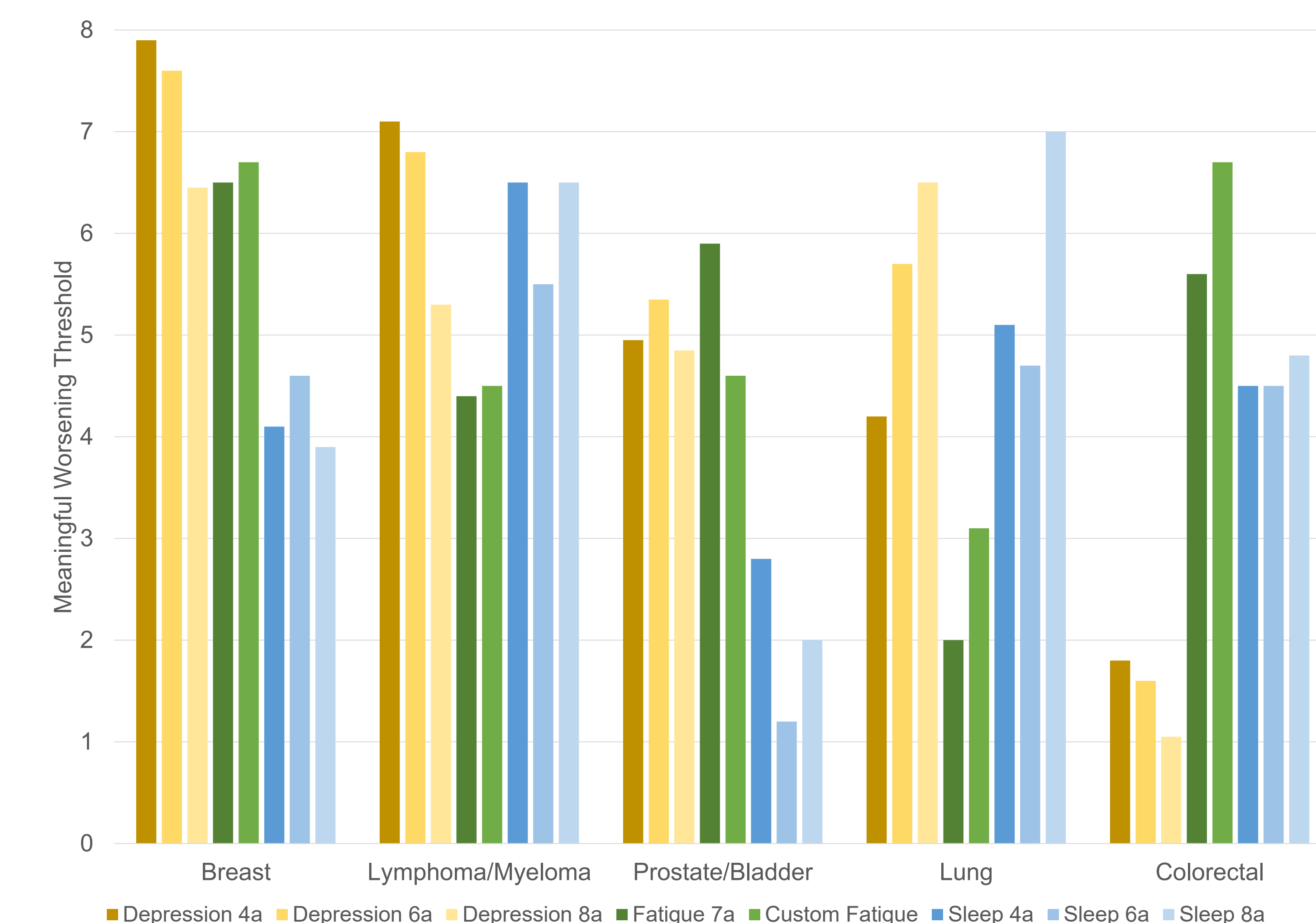
The absolute mean difference between meaningful change thresholds between within-domain short forms were **all < 1 T score point**.

Absolute Mean Threshold Differences by Domain & Method

| Domain | Median Change, Difference (range) | Predictive Modelling, Difference (range) |
|-------------------|-----------------------------------|------------------------------------------|
| Anxiety | 0.30 (0.09-0.39) | 0.01 (0.0-0.01) |
| Depression | 0.80 (0.04-0.12) | 0.01 (0.0-0.01) |
| APSRA | 0.22 (0.08-0.30) | 0.01 (0.0-0.01) |
| Sleep Disturbance | 0.22 (0.19-0.41) | 0.02 (0.02-0.04) |
| Fatigue | 0.03 ^a | 0.00 ^a |

^aOnly two short forms were compared for Fatigue, so no range is applicable

Median Change Thresholds for A Little Worsening by Cancer Type



Conclusions

- ❖ Overall, similar meaningful change threshold ranges apply to different PROMIS short forms within a domain.
- ❖ Threshold ranges differed across cancer types between and within domains, but often ≤ 2 points