PSYCHOSOCIAL ILLNESS IMPACT-NEGATIVE

MEASURE DIFFERENCES

A brief guide to differences between the PROMIS® Psychosocial Illness Impact-Negative instruments:

ADULT
PROMIS Bank v1.0 – Psychosocial Illness Impact-Negative
PROMIS Short Form v1.0 – Psychosocial Illness Impact- Negative 4a
PROMIS Short Form v1.0 – Psychosocial Illness Impact- Negative 8a

ABOUT PSYCHOSOCIAL ILLNESS IMPACT-NEGATIVE

The PROMIS Psychosocial Illness Impact-Negative, also known as "Negative Illness Impact", assesses the direct negative psychosocial effect of cancer, distinct from general emotional distress. Unlike general distress, which includes general anxiety or depression, negative illness impact refers to distress and other concerns specifically about the cancer or its sequelae (e.g., fear that cancer will recur or worsen). Additionally, Negative Illness Impact items do NOT seek to capture the negative impact of illness on physical or functional/role domains of functioning. The Psychosocial Illness Impact-Negative CAT is universal rather than disease-specific.
The item bank instructs participants to think about how their illness has affected them. Two items are presented on each screen. Participants are asked to respond to each item. The item bank uses the time frames "before your illness" and "since your illness" when assessing negative illness impact.

Psychosocial Illness Impact-Negative instruments are available for adults (ages 18+).

INTRODUCTION TO ASSESSMENT OPTIONS

There are two administration options for assessing Psychosocial Illness Impact-Negative: short forms and computer adaptive test (CAT). When administering a short form, instruct participants to answer all of the items (i.e., questions or statements) presented. With CAT, participant responses guide the system's choice of subsequent items from the full item bank (32 items in total). Although items differ across respondents taking CAT, scores are comparable across participants.

Some administrators may prefer to ask the same question of all respondents or of the same respondent over time, to enable a more direct comparability across people or time. In these cases, or when paper administration is preferred, a short form would be more desirable than CAT. This guide provides information on all Psychosocial Illness Impact-Negative short form and CAT instruments.

CAT: A minimum number of items (4 for adult CATs) must be answered in order to receive a score for Psychosocial Illness Impact –Negative CAT. The response to the first item will guide the system's choice of the next item for the participant. The participant's response to the second item will dictate the selection of the following question, and so on. As additional items are administered, the potential for error is reduced and confidence in the respondent's score increases. CAT will continue until either the standard error drops below a specified level (on the T-score metric 3.0 for adult CATs), or the participant has answered the maximum number of questions (12), whichever occurs first.

CAT versus Short Form: Whether one uses a short form or CAT, the score metric is Item Response Theory (IRT), a family of statistical models that link individual questions to a presumed underlying trait or concept of psychosocial illness impact-negative represented by all items in the item bank. When choosing between CAT and a short form, it is useful to consider the demands of computer-based assessment, and the psychological, physical, and cognitive burden placed on respondents as a result of the number of questions asked.

Figure 1 illustrates the correlations (strength of relationship) of the full bank with CAT and with short forms of varying length. The correlation of CAT scores with the full bank score is greater than a short form of any length. A longer CAT or longer short form offers greater correlation, as well as greater precision. When evaluating precision, not all questions are equally informative. The flexibility of CAT to choose more informative questions offers more precision.

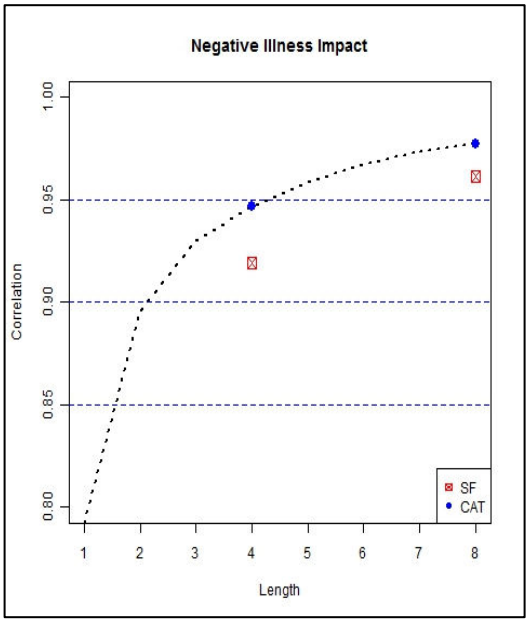


Figure 1

SHORT FORM DIFFERENCES

There are 2 adult short forms. Items were selected based on content and psychometric characteristics. Short form items are nested or overlap (e.g., an 8 item short form is the 4-item short form plus two additional items).

Selecting a Short Form

In selecting between short forms, the difference is instrument length. The reliability and precision of the short forms within a domain is highly similar. If you are working with a sample in which you want the most precise measure, select the longest short form. If you have little room for additional measures but really wanted to capture something as a secondary outcome, select one of the shorter instruments (e.g., 4-item short form).

SCORES

For most PROMIS instruments, a score of 50 is the average for the United States general population with a standard deviation of 10 because calibration testing was performed on a large sample of the general population. You can read more about the calibration and centering samples on HealthMeasures.net (http://www.healthmeasures.net/score-and-interpret/interpret-scores/promis). The T-score is provided with an error term (Standard Error or SE). The Standard Error is a statistical measure of variance and represents the "margin of error" for the T-score.

Important: *A higher PROMIS T-score represents more of the concept being measured.* For negatively-worded concepts like Psychosocial Illness Impact-Negative, a T-score of 60 is one SD worse than average. By comparison, a Psychosocial Illness Impact-Negative T-score of 40 is one SD better than average.

STATISTICAL CHARACTERISTICS

There are four key features of the score for Psychosocial Illness Impact-Negative:

- **Reliability**: The degree to which a measure is free of error. It can be estimated by the internal consistency of the responses to the measure, or by correlating total scores on the measure from two time points when there has been no true change in what is being measured (for z-scores, reliability = $1 - SE^2$).
- **Precision**: The consistency of the estimated score (reciprocal of error variance).
- **Information:** The precision of an item or multiple items at different levels of the underlying continuum (for z-scores, information = $1/SE^2$).
- **Standard Error (SE):** The possible range of the actual final score based upon the scaled T-score. For example, with a T-score of 52 and a SE of 2, the 95% confidence interval around the actual final score ranges from 48.1 to 55.9 (T-score $\pm$ (1.96*SE) = 52 $\pm$ 3.9 = 48.1 to 55.9).

The final score is represented by the T-score, a standardized score with a mean of 50 and a standard deviation (SD) of 10.

In Figure 2 (4a & 8a short forms), the two dotted horizontal lines each represent a degree of internal consistency reliability (i.e., .90 or .95) typically regarded as sufficient for an accurate individual score. The shaded blue region marks the range of the scale where measurement precision is comparable to the reliability of .90. Figure 2 also tells us where on the scale the form is most informative based upon the T-score: the 8-item form is more informative than the 4-item form.

Figure 3 is a sample of the statistical information available for the Psychosocial Illness Impact-Negative CAT.

More information is available at HealthMeasures.net.

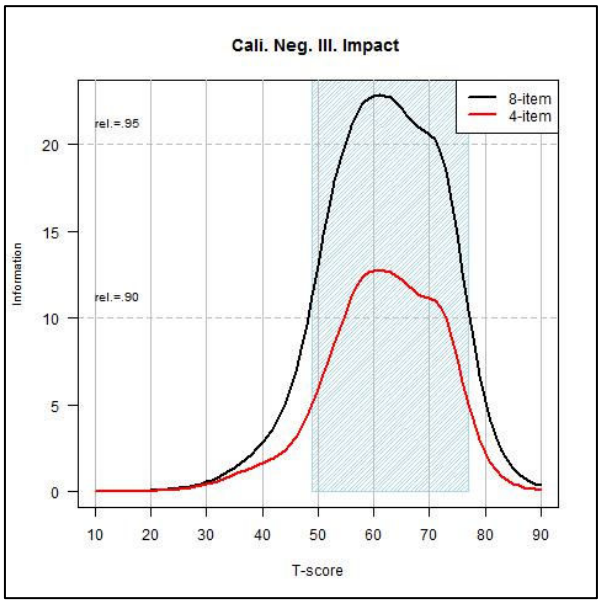


Figure 2

Scaling Model Used For Calibration	Graded Response Model

Sample	N	Alpha Reliability
Illness Impact Neg Full Bank	509	0.97

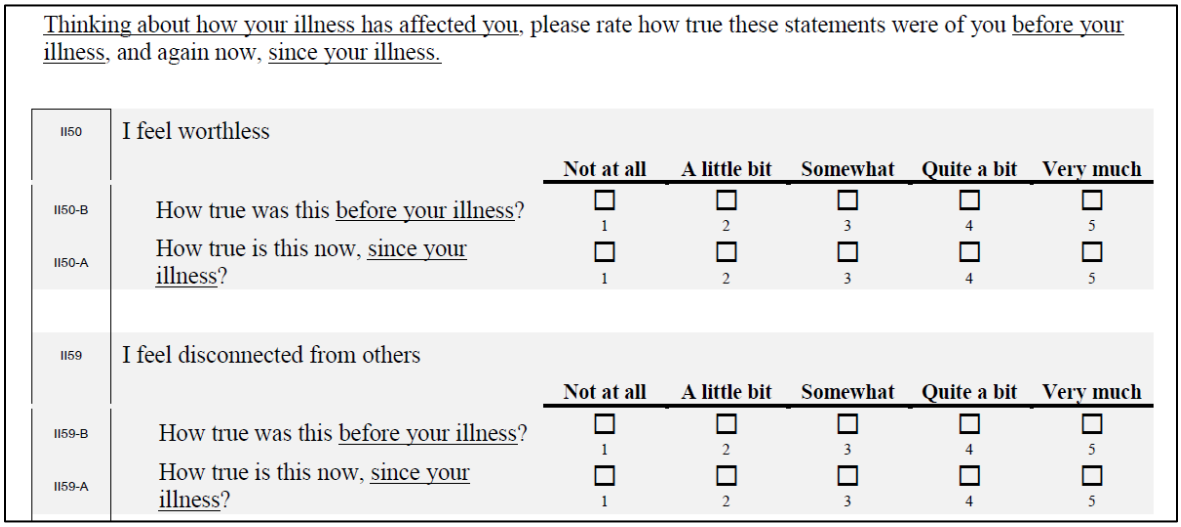
Score Distributions									
	Mean	SD	P5	P10	P25	P50	P75	P90	P95
Raw	58.09	24.92	33.00	35.00	40.00	51.00	69.00	95.20	112.00
Scale	49.91	9.71	33.04	37.60	43.97	49.87	55.50	62.77	66.39

										Min	Max
Scale Score	10.0	20.0	30.0	40.0	50.0	60.0	70.0	80.0	90.0	29.8	81.8
SE	9.50	8.10	5.40	3.00	1.60	1.30	1.30	2.00	4.30		
Reliability	.10	.34	.71	.91	.97	.98	.98	.96	.82		

Figure 3

PREVIEW OF SAMPLE ITEM

Figure 4 is an excerpt from the paper version of the adult eight-item short form. This is the paper version format used for all Psychosocial Illness Impact-Negative instruments. When administered digitally, it is recommended that both the "before your illness" and the "since your illness" items are on the same screen. It is important to note, CAT is not available for paper administration.



Thinking about how your illness has affected you, please rate how true these statements were of you before your illness, and again now, since your illness.

		Not at all	A little bit	Somewhat	Quite a bit	Very much
II50	I feel worthless					
II50-B	How true was this before your illness?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
II50-A	How true is this now, since your illness?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
II59	I feel disconnected from others					
II59-B	How true was this before your illness?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
II59-A	How true is this now, since your illness?	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Figure 4

FREQUENTLY ASKED QUESTIONS (FAQs)

Q: I am interested in learning more. Where can I do that?
Review the HealthMeasures website at www.healthmeasures.net.

Q: Are these instruments available in other languages?
Yes! Look at the HealthMeasures website (http://www.healthmeasures.net/explore-measurement-systems/promis/intro-to-promis/available-translations) for current information on PROMIS translations.

Q: Can I make my own short form?
Yes, custom short forms can be made by selecting any items from an item bank. This can be scored using the Scoring Service (https://www.assessmentcenter.net/ac_scoringservice).