PROsetta Stone Analysis Report
PROMIS Global Health

Xiaodan Tang, PhD, Nan E. Rothrock, PhD., and David Cella, PhD

Department of Medical Social Sciences
Northwestern University's Feinberg School of Medicine

Table of Contents

Summary

Six items from PROMIS Scale – Global Health were calibrated or co-calibrated to PROMIS domains. Table 1 includes the specific global items, datasets, and corresponding domain item bank. The following sections of this report include a description of the analyses and tables that provide a domain-level T-score for each response option of a given global item. Content of this report can be used with PROMIS Scale v1.0, v1.1, and v1.2 – Global Health.

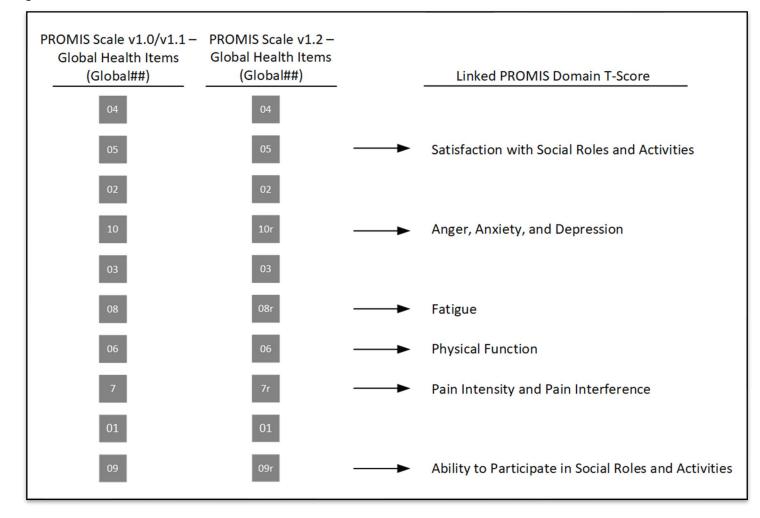| Variable Name(s)	Item Context	Item Stem	Scores and Responses	Dataset(s)	Parent Item Bank
Global05		In general, how would you rate your satisfaction with your social activities and relationships?	5=Excellent 4=Very good 3=Good 2=Fair 1=Poor	PROMIS Social Supplement	PROMIS v2.0 – Satisfaction with Social Roles and Activities
Global06		To what extent are you able to carry out your everyday physical activities such as walking, climbing stairs, carrying groceries, or moving a chair?	5=Completely 4=Mostly 3=Moderately 2=A little 1=Not at all	The dataset used to calibrate PROMIS Physical Function	Co-calibrated with the PROMIS v2.0 Physical Function item bank
Global07 or Global07r	In the past 7 days	How would you rate your pain on average?	0=No pain 1 2 3 4 5 6 7 8 9 10=Worst pain imaginable	• PROMIS 1 Wave 1 • PROMIS 1 Pain Supplement	• PROMIS v2.0 - Pain Intensity Scale 3a • PROMIS v1.1 - Pain Interference
Global08 (recoded) or Global08r	In the past 7 days	How would you rate your fatigue on average?	5=None 4=Mild 3=Moderate 2=Severe 1=Very severe	PROMIS 1 Wave 1	PROMIS v1.0 - Fatigue
Global09 or Global09r		In general, please rate how well you carry out your usual social activities and roles. (This includes activities at home, at work and in your community, and responsibilities as a parent, child, spouse, employee, friend, etc.)	5=Excellent 4=Very good 3=Good 2=Fair 1=Poor	PROMIS Social Supplement	PROMIS v2.0 – Ability to Participate in Social Roles and Activities
Global10 (recoded) or Global10r	In the past 7 days	How often have you been bothered by emotional problems such as feeling anxious, depressed or irritable?	5=Never 4=Rarely 3=Sometimes 2=Often 1=Always	PROMIS 1 Wave 1	• PROMIS v1.0 - Depression • PROMIS v1.0 - Anxiety • PROMIS v1.1 - Anger

Figure: PROMIS Global Items and Linked PROMIS Domains

Global Health – Satisfaction with Social Roles and Activities (Global05)

Variable Name	Item Context	Item Stem	Scores and Responses
Global05		In general, how would you rate your satisfaction with your social activities and relationships?	5=Excellent 4=Very good 3=Good 2=Fair 1=Poor

We calibrated the Global Satisfaction with Social Roles and Activities item by utilizing the existing PROMIS v2.0 – Satisfaction with Social Roles and Activities ("Social Satisfaction"), relying on the PROMIS Social Supplement dataset, which co-administered the global item with the item bank. We calibrated the Global Social Satisfaction item by freely estimating its item parameters, while fixing those of the PROMIS Social Satisfaction item bank at their existing values. In the PROMIS Social Supplement dataset, only 10 out of 44 PROMIS Social Satisfaction items were co-administered with the Global Social Satisfaction item. Using these 10 items, we employed the PROsetta R package to calibrate the Global Social Satisfaction item. This resulted in the following parameters:

Item	Linked Domain	a	b			
			1	2	3	4
Global05	Social Satisfaction	1.51453	-2.21843	-0.97265	0.20211	1.71107

Below is a list of PROMIS v2.0 Social Satisfaction items used to calibrate the Global Social Satisfaction item.

1	SRPSAT06r1
2	SRPSAT07r1
3	SRPSAT10r1
4	SRPSAT24r1
5	SRPSAT25r1
6	SRPSAT38r1
7	SRPSAT39r1
8	SRPSAT47r1
9	SRPSAT49r1
10	SRPSAT50r1

The table below shows 1) raw score to T-score conversion and 2) the average PROMIS Social Satisfaction T-score (calculated from the item bank) for each response option of the global item in the dataset.

Global05	T-Score	T-Score SE	Average T-Score	Average T-Score SD	Average T-Score SE
5=Excellent	60.36	8.51	59.99	7.93	0.89
4=Very good	54.08	7.64	53.37	7.69	0.54
3=Good	48.27	7.44	48.57	7.34	0.53
2=Fair	43.16	7.79	44.25	6.99	0.65
1=Poor	38.35	8.72	41.00	8.86	1.38

Note. Average T-Score refers to the average of T-scores calculated based on the items in the corresponding item bank for participants who endorsed each response option in the global item. SD refers to the standard deviation of the average T-score. SE refers to the standard error of the average T-score.

Global Health – Physical Function (Global06)

Variable Name	Item Context	Item Stem	Scores and Responses
Global06		To what extent are you able to carry out your everyday physical activities such as walking, climbing stairs, carrying groceries, or moving a chair?	5=Completely 4=Mostly 3=Moderately 2=A little 1=Not at all

Global06 was co-calibrated with the PROMIS PF item bank and was included in the PROMIS v2.0 - Physical Function and Mobility item bank. Below are its item parameters.

Item	Linked Domain	a	b			
			1	2	3	4
Global06	Physical Function	3.52599	-2.79058	-1.85323	-1.18972	-0.55054

The table below shows 1) raw score to T-score conversion and 2) the average PROMIS Physical Function T-score (calculated from the item banks) for each response option of the global item in the PROMIS 1 Wave 1 dataset.

Global06	T-Score	T-Score SE	Average T-Score	Average T-Score SD	Average T-Score SE
5=Completely	54.58	7.65	53.23	7.00	0.07
4=Mostly	43.19	4.72	42.93	5.63	0.11
3=Moderately	38.20	4.91	37.02	5.17	0.12
2=A little	32.73	5.42	31.42	4.69	0.15
1=Not at all	26.04	6.27	25.41	8.67	0.66

Note. Average T-Score refers to the average of T-scores calculated based on the items in the corresponding item bank for participants who endorsed each response option in the global item. SD refers to the standard deviation of the average T-score. SE refers to the standard error of the average T-score.

Global Health – Pain Intensity and Pain Interference (Global07, Global07r)

Variable Names	Item Context	Item Stem	Scores and Responses
Global07 or Global07r	In the past 7 days	How would you rate your pain on average?	0=No pain 1 2 3 4 5 6 7 8 9 10=Worst pain imaginable

We calibrated the Global Pain Intensity item by utilizing the existing PROMIS Pain Intensity (PROMIS v2.0 - Pain Intensity Scale 3a) and Pain Interference (PROMIS v1.1 - Pain Interference) item banks, relying on the PROMIS 1 Wave 1 and PROMIS 1 Pain Supplement datasets, which co-administered the global item with the two item banks. We calibrated the Global Pain item by freely estimating its item parameters, while fixing those of the PROMIS Pain Intensity and Pain Interference item banks at their existing values, respectively. We employed the PROsetta R package to calibrate the Global Pain item. This resulted in the following parameters:

Item	Linked Domain	a	b									
			1	2	3	4	5	6	7	8	9	10
Global07 or Global07r	Pain Intensity	2.81326	-0.73893	0.01350	0.48887	0.92769	1.24233	1.57992	1.98954	2.62992	3.34255	3.80032
	Pain Interference	2.50538	-0.72389	-0.10050	0.33739	0.73826	1.01369	1.32417	1.69772	2.23191	2.87973	3.33324

The tables below show 1) raw score to T-score conversion and 2) the average PROMIS Pain Intensity/Pain Interference T-score (calculated from the item banks) for each response option of the global item in the dataset.

Global07 or Global07r	T-Score	T-Score SE	Average T-Score	Average T-Score SD	Average T-Score SE
Pain Intensity					
0=No pain	39.55	6.87	42.39	6.02	0.17
1	47.43	5.41	48.12	5.85	0.19
2	51.82	5.25	51.75	5.79	0.22
3	55.13	5.31	54.16	5.86	0.23
4	57.85	5.39	57.34	5.88	0.29
5	60.14	5.53	59.64	6.14	0.31
6	62.65	5.75	62.44	5.92	0.29
7	65.84	6.17	65.01	6.77	0.31
8	69.68	6.79	68.09	6.57	0.41
9	72.79	7.45	70.04	6.15	0.73
10=Worst pain imaginable	74.78	8.02	70.92	7.34	1.00

Global07 or Global07r	T-Score	T-Score SE	Average T-Score	Average T-Score SD	Average T-Score SE
Pain Interference					
0=No pain	40.10	7.15	43.07	4.56	0.08
1	47.22	5.72	46.49	6.12	0.12
2	50.81	5.62	50.37	6.73	0.15
3	53.68	5.66	53.48	6.66	0.15
4	55.99	5.71	56.54	6.57	0.19
5	57.94	5.83	58.31	7.00	0.20
6	60.14	6.01	61.41	6.62	0.19
7	62.86	6.33	63.77	6.62	0.19
8	66.12	6.83	66.41	6.30	0.24
9	69.01	7.39	68.44	6.33	0.46
10=Worst pain imaginable	71.49	8.14	70.16	6.70	0.61

Note. Average T-Score refers to the average of T-scores calculated based on the items in the corresponding item bank for participants who endorsed each response option in the global item. SD refers to the standard deviation of the average T-score. SE refers to the standard error of the average T-score.

Global Health – Fatigue (Global08, Global08r)

Variable Names	Item Context	Item Stem	Scores and Responses
Global08 (recoded) or Global08r	In the past 7 days	How would you rate your fatigue on average?	5=None 4=Mild 3=Moderate 2=Severe 1=Very severe

The Global Fatigue item was co-calibrated with the other 95 items included in the PROMIS Fatigue Item bank (PROMIS v1.0 - Fatigue) from the beginning; hence, no additional calibration is required. Below are its parameter estimations (from the previous global item calibration report).

Item	Linked Domain	a	b			
			1	2	3	4
Global08 (recoded) or Global08r	Fatigue	2.64422	-0.93456	0.38165	1.70629	2.84206

The table below shows 1) raw score to T-score conversion and 2) the average PROMIS Fatigue T-score (calculated from the item banks) for each response option of the global item in the PROMIS 1 Wave 1 dataset.

Global08	Global08r	T-Score	T-Score SE	Average T-Score	Average T-Score SD	Average T-Score SE
1=None	5=None	38.80	6.95	40.17	6.35	0.12
2=Mild	4=Mild	48.23	6.00	48.24	6.37	0.08
3=Moderate	3=Moderate	56.64	6.10	56.72	6.45	0.10
4=Severe	2=Severe	64.41	6.48	64.80	5.99	0.17
5=Very severe	1=Very severe	70.58	7.55	70.57	5.77	0.43

Note. Average T-Score refers to the average of T-scores calculated based on the items in the corresponding item bank for participants who endorsed each response option in the global item. SD refers to the standard deviation of the average T-score. SE refers to the standard error of the average T-score.

Global Health – Participation in Social Roles and Activities (Global 09, Global09r)

Variable Names	Item Context	Item Stem	Scores and Responses
Global09 or Global09r		In general, please rate how well you carry out your usual social activities and roles. (This includes activities at home, at work and in your community, and responsibilities as a parent, child, spouse, employee, friend, etc.)	5=Excellent 4=Very good 3=Good 2=Fair 1=Poor

We calibrated the Global Participation in Social Roles item by utilizing the existing PROMIS Ability to Participate in Social Roles item bank (PROMIS v2.0 - Ability to Participate in Social Roles and Activities), relying on the PROMIS Social Supplement dataset, which co-administered the global item with the item bank. We calibrated the Global Participation in Social Roles item by freely estimating its item parameters, while fixing those of the PROMIS Ability to Participate in Social Roles item bank at their existing values. In the PROMIS Social Supplement dataset, only 13 out of 35 PROMIS Ability to Participate in Social Roles items were co-administered with the Global Participation in Social Roles item. Using these 13 items, we employed the PROsetta R package to calibrate the Global Participation in Social Roles item. This resulted in the following parameters:

Item	Linked Domain	a	b			
			1	2	3	4
Global09 or Global09r	Ability to Participate in Social Roles and Activities	2.21568	-2.52592	-1.15366	-0.12167	1.01267

Below is a list of PROMIS Ability to Participate in Social Roles and Activities items used to calibrate the Global Participation in Social Roles item.

1	SRPPER_CaPS1
2	SRPPER01r1
3	SRPPER02r1
4	SRPPER03r1
5	SRPPER08_CaPS
6	SRPPER11_CaPS
7	SRPPER14r1
8	SRPPER15_CaPS
9	SRPPER16r1
10	SRPPER23_CaPS
11	SRPPER28r1
12	SRPPER31_CaPS
13	SRPPER46_CaPS

The table below shows 1) raw score to T-score conversion and 2) the average PROMIS Social Roles T-score (calculated from the item bank) for each response option of the global item in the dataset.

Global09 or Global09r	T-Score	T-Score SE	Average T-Score	Average T-Score SD	Average T-Score SE
5=Excellent	60.65	7.41	57.89	6.93	0.65
4=Very good	52.66	6.37	52.87	6.52	0.44
3=Good	46.15	6.34	47.13	5.24	0.38
2=Fair	39.66	6.88	41.94	6.69	0.70
1=Poor	32.98	7.94	33.11	6.24	1.67

Note. Average T-Score refers to the average of T-scores calculated based on the items in the corresponding item bank for participants who endorsed each response option in the global item. SD refers to the standard deviation of the average T-score. SE refers to the standard error of the average T-score.

Global Health – Anger, Anxiety, and Depression (Global10, Global10r)

Variable Names	Item Context	Item Stem	Scores and Responses
Global10 (recoded) or Global10r	In the past 7 days	How often have you been bothered by emotional problems such as feeling anxious, depressed or irritable?	5=Never 4=Rarely 3=Sometimes 2=Often 1=Always

We calibrated the Global Emotional Distress item by utilizing the existing PROMIS Anxiety (PROMIS v1.0 - Anxiety), Depression (PROMIS v1.0 – Depression), and Anger (PROMIS v1.1 - Anger) item banks, relying on the PROMIS 1 Wave 1 dataset, which co-administered the global item with the three item banks. We calibrated the Global Emotional Distress item by freely estimating its item parameters, while fixing those of the PROMIS Anxiety, Depression, and Anger item banks at their existing values, respectively. We employed the PROsetta R package to calibrate the Global Emotional Distress item. This resulted in the following parameters:

Item	Linked Domain	a	b			
			1	2	3	4
Global10 or Global10r	Anxiety	2.22489	-0.80998	0.36283	1.49488	2.67062
	Depression	2.32348	-0.79227	0.35780	1.48036	2.63835
	Anger	1.51427	-1.00128	0.37702	1.70278	3.14104

The table below shows 1) raw score to T-score conversion and 2) the average PROMIS Anxiety, Depression, and Anger T-score (calculated from the item banks) for each response option of the global item in the dataset.

Global10	Global10r	T-Score	T-Score SE	Average T-Score	Average T-Score SD	Average T-Score SE
		Anxiety				
1=Never	5=Never	40.24	7.43	43.54	5.62	0.09
2=Rarely	4=Rarely	48.67	6.36	48.16	6.53	0.09
3=Sometimes	3=Sometimes	55.53	6.44	54.13	7.16	0.12
4=Often	2=Often	61.90	6.94	61.44	7.22	0.18
5=Always	1=Always	67.58	8.03	66.85	7.96	0.42
		Depression				
1=Never	5=Never	40.11	7.32	43.45	5.38	0.09
2=Rarely	4=Rarely	48.67	6.22	47.93	6.59	0.09
3=Sometimes	3=Sometimes	55.62	6.31	54.52	7.10	0.11
4=Often	2=Often	62.14	6.79	61.91	6.94	0.18
5=Always	1=Always	68.04	7.86	67.47	7.65	0.40
		Anger				
1=Never	5=Never	41.70	8.36	45.32	6.58	0.11
2=Rarely	4=Rarely	48.63	7.50	48.54	6.62	0.09
3=Sometimes	3=Sometimes	54.52	7.61	52.81	7.53	0.12
4=Often	2=Often	59.67	8.21	57.92	8.26	0.21
5=Always	1=Always	63.44	9.17	61.94	8.82	0.46

Note. Average T-Score refers to the average of T-scores calculated based on the items in the corresponding item bank for participants who endorsed each response option in the global item. SD refers to the standard deviation of the average T-score. SE refers to the standard error of the average T-score.