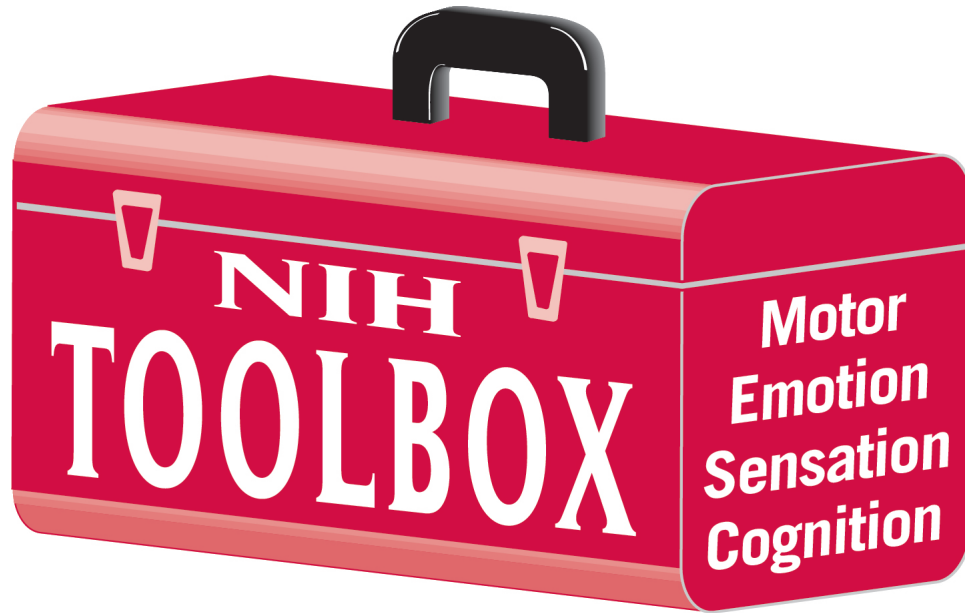


NIH Toolbox



Technical Manual

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NIH Toolbox Technical Manual

Domain:

EMOTION

Subdomain:

STRESS AND SELF-EFFICACY

Subdomain Component:

PERCEIVED STRESS

Measure:

NIH Toolbox Perceived Stress Survey

The NIH Toolbox Perceived Stress Survey is comprised of 10 items from the Perceived Stress Scale (Cohen S, Janicki-Deverts D. Who's Stressed? Distributions of Psychological Stress in the United States in Probability Samples from 1983, 2006, and 2009. *Journal of Applied Social Psychology*. 2012;42(6):1320-1334.)

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National Institute on Drug Abuse (NIDA)

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This Technical Manual contains the following informational sections:

Section 1: Introduction to NIH Toolbox

Section 2: Validation

Section 3: Norming

Section 4: NIH Toolbox and the National Children's Study (NCS)

Section 5: Domain Definition

Section 6: Subdomain and Subdomain Component Definitions

Section 7: Measure Description

Section 8: Post-Validation/Post-Norming Changes to the Measure

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Section 10: Measure Norms-18-85 Self Report

Section 11: Measure Norms-13-17 Self Report

Section 12: Measure Norms-8-12 Parent Report

Section 1: Introduction to NIH Toolbox

NIH Toolbox is a multidimensional set of brief measures assessing cognitive, emotional, motor, and sensory function from ages 3-85. This suite of on-line and royalty-free measures can be administered to study participants 3 to 85 years of age in two hours or less, across diverse study designs and settings.

What is the NIH Toolbox?

The NIH Toolbox provides a standard set of royalty-free, brief, and comprehensive assessment tools that can be used by researchers and clinicians in a variety of settings, with a particular emphasis on measuring outcomes in longitudinal epidemiologic studies and prevention or intervention trials across the lifespan (ages 3-85). The battery ensures that assessment methods and results can be used for comparisons across existing and future studies and provides a “common currency” for the study of neurological research that promotes economies of scale and enhanced efficiency in measurement. The NIH Toolbox can be used to monitor neurological and behavioral function over time and measure key constructs across developmental stages. This facilitates the study of functional changes across the lifespan, including evaluating intervention and treatment effectiveness.

The NIH Toolbox Batteries

The basic NIH Toolbox can be administered within two hours and divides tests into four domain batteries: Cognition, Emotion, Motor, and Sensation. In addition, within some domains, there are supplemental measures that are available to be administered.

Selection of the NIH Toolbox Domains and Subdomains

Four domains were selected for the NIH Toolbox: Cognition, Emotion, Motor, and Sensation. Subdomain selection was based upon literature reviews, expert interviews, and multiple formal Requests for Information (RFI) of NIH-funded researchers. Initial literature and database reviews and an RFI identified the subdomains for inclusion in the NIH Toolbox, existing measures relevant to the project goals, and criteria for instrument selection. NIH Project Team members, external content experts, and contract scientists met at a follow-up consensus meeting to discuss potential subdomains along with the criteria affecting instrument selection, creation, and norming. Additional expert interviews were undertaken to gather more detailed information from clinical and scientific experts to help further refine the list of possible subdomains. A second consensus group meeting was held and results directed the decision for the final NIH Toolbox to assess four core domain areas (cognitive, emotional, motor, and sensory health and function).

Selection of Measures for the NIH Toolbox

More than 1,400 existing measures were identified and evaluated for potential inclusion in the NIH Toolbox. The selection criteria included a measure's applicability across the life span,

psychometric soundness, brevity, ease of use, applicability in diverse settings and with different groups, and lack of intellectual property constraints. There was also a preference for instruments that were already validated and normed for use with individuals between 3 and 85 years old. Results of the instrument selection process yielded draft development plans established for the NIH Toolbox measures.

Early Childhood Use

NIH Toolbox measure development focused special attention on assessing young children, to ensure that all tests given are developmentally appropriate for ages 3-7. A special team of early childhood assessment consultants was engaged to provide testing guidelines for the very young, to offer input on measure development, and to review all NIH Toolbox measures to ensure they fit the needs of young children. Advanced statistical methods were used to emphasize continuity of measurement, allowing Toolbox users to confidently conduct longitudinal measurement from age 3 through the life span while assessing the same domain constructs.

Section 2: Validation

Validation studies were conducted for all NIH Toolbox Emotion domain measures, to assure that these important tools for research met rigorous psychometric standards. Studies were

conducted across the entire age range and were statistically compared against “gold standard” measures wherever available.

For specifics regarding Emotion domain measure validation, see Salsman et al., Emotion Assessment using the NIH Toolbox, *Neurology*, in press. This manuscript describes measure development studies undertaken (e.g., expert panels for content development and validation; cognitive interviews; small and large-scale pilot testing) and psychometric characteristics (e.g., internal consistency and test-retest reliability; convergent and divergent validity).

Section 3: Norming

NIH Toolbox conducted a large national standardization study in both English and Spanish languages to allow for normative comparisons on each assessment. A sample of 4,859 participants, ages 3-85 – representative of the U.S. population based on gender, ethnicity, race, and socioeconomic status – was administered all of the NIH Toolbox measures at sites around the country (n = 2,917 English-speaking children, ages 3-17; n = 496 Spanish-speaking children, ages 3-7; n = 1,038 English-speaking adults, ages 18-85; n = 408 Spanish-speaking adults, ages 18-85). NIH Toolbox normative scores are now available for each year of age from 3 through 17, as well as for age ranges 18-29, 30-39, 40-49, 50-59, 60-69, and 70-85, allowing for targeted and accurate comparisons to the U.S. population.

Specifics regarding NIH Toolbox norming sampling methods (e.g., stratification by age, gender, and language preference; sampling a minimum of 25-100 individuals per targeted demographic and language subgroup) and norming analytic methods (e.g., post-stratification adjustment using iterative proportional fitting, i.e., “raking”) can be found in the following publication: Beaumont et al., Norming Plans for the NIH Toolbox, *Neurology*, in press.

Section 4: NIH Toolbox and the National Children’s Study (NCS)

In collaboration with NIH Toolbox scientists, NCS investigators selected measures from PROMIS and NIH Toolbox for a Maternal Health Profile, the Maternal Self-Reported Health Battery. This profile assesses Physical Health (Physical function, Fatigue, Sleep disturbance, Sleep-related impairment), Mental Health (Anger, Anxiety, Depression, Positive affect, Perceived stress, Self-efficacy), and Social Health (Social support and companionship, Social isolation). The Maternal Self-Reported Health Battery was field tested in fall 2011, using an online sample of 1000 women (200 pre-conception, 150 pregnant women (50 per trimester), and 650 mothers with a child between 0-36 months of age). In addition, NIH Toolbox norming was jointly sponsored by the NCS and included: 3,413 children in single-year age bands (from 3-17 years); 1,446 adults in seven age bands, including the mothers of children also being tested; and 105 pregnant women. The NIH Toolbox sampling plan matched distributions of race/ethnicity and level of education for each age band.

Section 5: Domain Definition

Domain: EMOTION

Emotion refers to any strong feelings, as of joy, sorrow, or fear. Emotion is an affective state of consciousness in which joy, sorrow, fear, hate, or the like, is experienced, as distinguished from cognitive and volitional states of consciousness. Emotions can be negative and distressing, or positive emotions can be reflections of well-being in our lives, and positive social relationships can buffer stress and enhance health. The NIH Toolbox Emotion domain includes four major subdomains: Psychological Well-Being, Negative Affect, Stress and Self-Efficacy, and Social Relationships. Measures include both self-report and, for certain ages, parent-report versions.

PSYCHOLOGICAL WELL-BEING

POSITIVE AFFECT

Measured by:

NIH Toolbox Positive Affect Survey

LIFE SATISFACTION

Measured by:

NIH Toolbox General Life Satisfaction Survey

NIH Toolbox Domain-Specific Life Satisfaction Survey (Supplemental Measure)

MEANING AND PURPOSE

Measured by:

NIH Toolbox Meaning and Purpose Survey

NEGATIVE AFFECT

ANGER

Measured by:

NIH Toolbox Anger-Affect Survey

NIH Toolbox Anger-Hostility Survey

NIH Toolbox Anger-Physical Aggression Survey

NIH Toolbox Anger Survey

FEAR

Measured by:

NIH Toolbox Fear-Affect Survey

NIH Toolbox Fear-Somatic Arousal Survey

NIH Toolbox Fear-Over Anxious Survey

NIH Toolbox Fear Survey

NIH Toolbox Fear-Separation Anxiety Survey

SADNESS

Measured by:

NIH Toolbox Sadness Survey

NIH Toolbox Apathy Survey (Supplemental Measure)

STRESS AND SELF-EFFICACY

PERCEIVED STRESS

Measured by:

NIH Toolbox Perceived Stress Survey

SELF-EFFICACY

Measured by:

NIH Toolbox Self-Efficacy Survey

COPING STRATEGIES

Measured by:

NIH Toolbox Emotion Control Survey (Supplemental Measure)

SOCIAL RELATIONSHIPS

PERCEIVED SOCIAL SUPPORT

Measured by:

NIH Toolbox Emotional Support Survey

NIH Toolbox Instrumental Support Survey

NIH Toolbox Maternal Relationship Survey (Supplemental Measure)

NIH Toolbox Paternal Relationship Survey (Supplemental Measure)

NIH Toolbox Positive Parental Relationship Survey (Supplemental Measure)

NIH Toolbox Negative Parental Relationship Survey (Supplemental Measure)

COMPANIONSHIP

Measured by:

NIH Toolbox Friendship Survey

NIH Toolbox Loneliness Survey

NIH Toolbox Social Withdrawal Survey

NIH Toolbox Positive Peer Interaction Survey

SOCIAL DISTRESS

Measured by:

NIH Toolbox Perceived Rejection Survey

NIH Toolbox Perceived Hostility Survey

NIH Toolbox Peer Rejection Survey

NIH Toolbox Sibling Rejection Survey (Supplemental Measure)

POSITIVE SOCIAL DEVELOPMENT

Measured by:

NIH Toolbox Empathic Behaviors Survey

EMOTION Batteries

There are two NIH Toolbox Emotion Batteries – a self-report battery and a parent-report battery. The self-report battery is available for ages 8-85 and includes all age-specified measures in the Psychological Well-Being, Negative Affect, Stress and Self-Efficacy, and Social Relationships domains, as indicated. The parent-report battery is available for ages 3-12 and includes all age-specified measures in the Psychological Well-Being, Negative Affect, Stress and Self-Efficacy, and Social Relationships domains, as indicated. There are individual scores provided for each individual battery measure, as described, but no composite scores.

Section 6: Subdomain and Subdomain Component Definitions

Subdomain: STRESS AND SELF-EFFICACY

Stress and Self-Efficacy focus on individual perceptions about the nature of events and their relationship to the perceived coping resources of an individual. In general, psychological stress is said to occur when an individual perceives that environmental or internal demands that are

personally meaningful exceed his/her adaptive capacity. NIH Toolbox assesses three areas related to stress and adaptive capacity: Perceived Stress, Self-Efficacy, and Emotion Control.

Subdomain Component: PERCEIVED STRESS

Perceived Stress is defined by individual perceptions about the nature of events and their relationship to the values and coping resources of an individual. In NIH Toolbox, Perceived Stress is measured by:

NIH Toolbox Perceived Stress Survey

Section 7: Measure Description

EMOTION Core Measure

The NIH Toolbox Perceived Stress Survey is a self-report measure administered to ages 13-85, as well as a parent-report measure for ages 8-12. Both versions are administered as computer-adaptive tests. It assesses how unpredictable, uncontrollable, and overloaded respondents find their lives.

Section 8: Post-Validation/Post-Norming Changes to the Measure

In addition to those changes previously reported on during the measure's development and validation phases (Salsman et al., Emotion Assessment Using the NIH Toolbox, *Neurology*, in press), the following changes have been made to this measure:

Item-level changes (18-85 Self Report, 13-17 Self Report, 8-12 Self Report, 8-12 Parent Report):

Item wording changed from: The questions in this *scale* ask you about your feelings and thoughts during the last month.

Item wording changed to: The following questions ask you about your feelings and thoughts during the last month.

Rationale for change: Improved readability.

Item-level changes (8-12 Self Report):

Item wording changed from: In the last month, how often have you been upset by something you didn't expect to happen/when something happened that you didn't expect)? (These directions have a Lexile = 1210, i.e., ~12th grade level.)

Item wording changed to: In the last month, how often have you been upset by something you didn't expect to happen? (OR) In the last month, how often have you

been upset when something happened that you didn't expect? (Item stems have Lexiles = 930, i.e., 5/6th grade level.)

Rationale for change: Improved readability.

Item-level changes (18-85 Self Report):

Item wording changed from: In the last month, how often have you dealt successfully with day to day problems and annoyances (8th grade level)?

Item wording changed to: In the last month, how often have you dealt successfully with day to day problems and things that bother you (6th grade level)?

Rationale for change: Improved readability.

Item-level changes (18-85 Self Report, 13-17 Self Report, 8-12 Self Report, 8-12 Parent Report):

Item context change: Add "In the past month..." to the items' context.

Item stems change: Remove "In the past month" from each item stem. Begin each stem with "How often have/did you".

Rationale for changes: These changes provide a simpler and clearer item presentation for end-users; they also provide an item presentation that is consistent with the positioning and structuring of other domain and subdomain item contexts and stems.

Section 9: The Measure's Scoring Model

Measurement theory applied for scoring:

Rasch/Item Response Theory (IRT)

Rasch/IRT model employed:

Graded Response Model

Measure length:

Variable (computer-adaptive test, 13-85 Self Report)

Variable (computer-adaptive test, 8-12 Parent Report)

Response data:

Ordinal (items have a 5-point response scale; options range from “never” to “very often”)

Scores computed/available*:

Rasch/IRT Theta Score

Age-Adjusted Scale Score (mean=50, standard deviation=10)

Fully Adjusted Scale Score (mean=50, standard deviation=10)

Unadjusted Scale Score (mean=50, standard deviation=10)

National Percentile Rank (corresponds to the Age-Adjusted Scale Score)

*Details on these scores and their interpretations are available in the NIH Toolbox Scoring and Interpretation Guide.

Section 10: Measure Norms-18-85 Self Report

The following Tables and Figure present NIH Toolbox normative data associated with this measure:

Table 1. Measure Raw/Computed Score, Unadjusted Scale Score, and Fully Adjusted Scale Score Summary (N, Mean, Standard Deviation) by Age Group (18-29, 30-39, 40-49, 50-59, 60-69, 70-85, All)

Table 2. Measure Raw/Computed Score Statistics (N, Mean, Standard Deviation, Minimum/Maximum Observed, 25th/50th/75th Percentile) per Age Group (18-29, 30-39, 40-49, 50-59, 60-69, 70-85, All)

Figure 1. Measure Mean Unadjusted Scale Scores across All Age Groups (18-29, 30-39, 40-49, 50-59, 60-69, 70-85)

Table 1. NIH Toolbox Perceived Stress 18-85 by Age Group	Perceived Stress (theta)			Perceived Stress 18-85 Unadjusted Scale Score			Perceived Stress 18-85 Fully Adjusted Scale Score		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Age Group									
3	0			0			0		
4	0			0			0		
5	0			0			0		
6	0			0			0		
7	0			0			0		
8	0			0			0		
9	0			0			0		
10	0			0			0		
11	0			0			0		
12	0			0			0		
13	0			0			0		
14	0			0			0		
15	0			0			0		
16	0			0			0		
17	0			0			0		
18 - 29	262	0.01	1.98	262	50.21	20.44	257	50.13	20.07
30 - 39	304	0.08	1.41	304	50.93	14.59	292	50.08	14.95
40 - 49	249	0.11	1.52	249	51.25	15.97	236	49.93	16.35
50 - 59	189	-0.04	1.62	189	49.74	16.92	174	50.15	17.52
60 - 69	163	-0.23	1.68	163	47.73	17.23	152	50.16	17.98
70 - 85	237	-0.30	1.13	237	47.04	11.91	214	50.04	12.04
All	1404	-0.03	1.58	1404	49.82	16.45	1325	50.08	16.58

Table 2. NIH Toolbox Perceived Stress (theta) – Age 18-29		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	60	113	173	20	69	89	80	182	262
	Mean	-0.19	0.20	0.02	-0.07	0.02	-0.01	-0.18	0.17	0.01
	Standard Deviation	2.56	2.14	2.32	0.94	1.08	1.05	2.26	1.82	1.98
	Minimum Observed	-2.76	-2.10	-2.76	-2.18	-2.76	-2.76	-2.76	-2.76	-2.76
	25th Percentile	-0.71	-0.52	-0.62	-0.47	-0.59	-0.47	-0.67	-0.52	-0.61
	50th Percentile (Median)	-0.15	0.05	-0.03	0.05	-0.04	0.00	-0.15	0.05	-0.03
	75th Percentile	0.68	1.10	0.73	0.39	0.72	0.51	0.68	1.01	0.72
	Maximum Observed	1.82	2.73	2.73	0.82	2.25	2.25	1.82	2.73	2.73

Table 2. NIH Toolbox Perceived Stress (theta) – Age 30-39		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	53	157	210	19	75	94	72	232	304
	Mean	0.02	0.17	0.12	-0.46	-0.13	-0.23	-0.03	0.13	0.08
	Standard Deviation	2.00	1.43	1.59	0.95	0.78	0.82	1.79	1.26	1.41
	Minimum Observed	-1.89	-2.36	-2.36	-2.76	-2.76	-2.76	-2.76	-2.76	-2.76
	25th Percentile	-0.75	-0.42	-0.49	-1.01	-0.79	-0.81	-0.77	-0.45	-0.56
	50th Percentile (Median)	-0.25	0.16	0.07	-0.23	-0.12	-0.23	-0.25	0.11	0.03
	75th Percentile	0.64	0.65	0.64	-0.08	0.43	0.32	0.63	0.62	0.63
	Maximum Observed	2.40	2.70	2.70	1.57	2.07	2.07	2.40	2.70	2.70

Table 2. NIH Toolbox Perceived Stress (theta) – Age 40-49		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	61	118	179	29	41	70	90	159	249
	Mean	0.04	0.13	0.09	0.22	0.29	0.26	0.06	0.15	0.11
	Standard Deviation	1.76	1.67	1.70	0.93	0.91	0.91	1.54	1.51	1.52
	Minimum Observed	-2.13	-1.78	-2.13	-1.29	-2.33	-2.33	-2.13	-2.33	-2.33
	25th Percentile	-0.49	-0.54	-0.50	-0.46	-0.42	-0.43	-0.49	-0.50	-0.49
	50th Percentile (Median)	0.02	0.07	0.06	0.18	0.23	0.23	0.07	0.09	0.07
	75th Percentile	0.49	0.68	0.65	0.75	0.94	0.87	0.53	0.76	0.66
	Maximum Observed	2.58	2.84	2.84	2.23	3.23	3.23	2.58	3.23	3.23

Table 2. NIH Toolbox Perceived Stress (theta) – Age 50-59		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	57	83	140	25	24	49	82	107	189
	Mean	-0.13	0.02	-0.06	0.02	0.32	0.14	-0.11	0.05	-0.04
	Standard Deviation	2.12	1.56	1.81	0.99	0.74	0.88	1.84	1.42	1.62
	Minimum Observed	-2.41	-2.08	-2.41	-1.84	-0.77	-1.84	-2.41	-2.08	-2.41
	25th Percentile	-0.73	-0.45	-0.54	-0.43	-0.30	-0.34	-0.73	-0.44	-0.54
	50th Percentile (Median)	0.06	-0.08	-0.03	0.10	0.26	0.11	0.06	-0.03	-0.01
	75th Percentile	0.35	0.48	0.40	0.50	0.72	0.68	0.38	0.49	0.47
	Maximum Observed	1.79	3.15	3.15	1.40	1.58	1.58	1.79	3.15	3.15

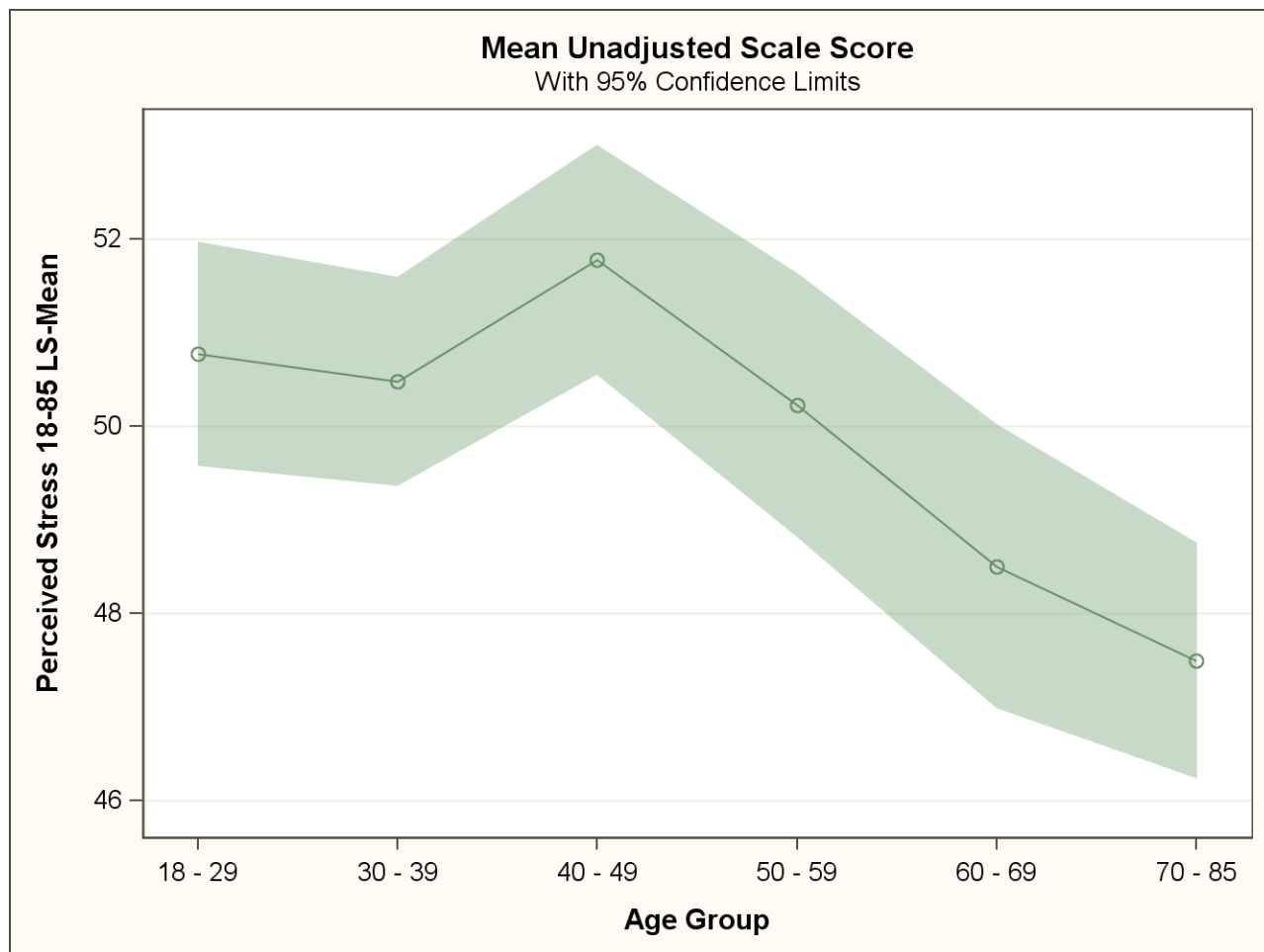
Table 2. NIH Toolbox Perceived Stress (theta) – Age 60-69		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	49	70	119	19	25	44	68	95	163
	Mean	-0.36	-0.16	-0.26	-0.13	0.27	0.05	-0.34	-0.12	-0.23
	Standard Deviation	1.86	1.89	1.88	1.10	0.67	0.89	1.68	1.67	1.68
	Minimum Observed	-2.28	-2.41	-2.41	-2.76	-1.17	-2.76	-2.76	-2.41	-2.76
	25th Percentile	-0.74	-0.64	-0.74	-0.43	-0.16	-0.43	-0.74	-0.64	-0.69
	50th Percentile (Median)	-0.33	-0.24	-0.29	-0.19	0.42	0.08	-0.30	-0.24	-0.29
	75th Percentile	0.28	0.44	0.36	0.65	0.70	0.65	0.32	0.61	0.36
	Maximum Observed	2.50	2.85	2.85	1.56	2.00	2.00	2.50	2.85	2.85

Table 2. NIH Toolbox Perceived Stress (theta) – Age 70-85		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	96	103	199	21	17	38	117	120	237
	Mean	-0.32	-0.29	-0.31	-0.11	0.07	-0.05	-0.31	-0.28	-0.30
	Standard Deviation	1.30	1.09	1.20	0.73	0.60	0.67	1.22	1.04	1.13
	Minimum Observed	-2.53	-2.76	-2.76	-2.33	-2.42	-2.42	-2.53	-2.76	-2.76
	25th Percentile	-0.90	-0.89	-0.90	-0.91	-0.38	-0.67	-0.90	-0.89	-0.90
	50th Percentile (Median)	-0.35	-0.17	-0.29	-0.20	0.40	0.07	-0.33	-0.14	-0.28
	75th Percentile	0.33	0.34	0.33	0.66	0.87	0.87	0.34	0.34	0.34
	Maximum Observed	1.54	1.98	1.98	1.43	1.18	1.43	1.54	1.98	1.98

Table 2. NIH Toolbox Perceived Stress (theta) – NCS Sample of Mothers		English	Spanish	All
	N	81	34	115
	Mean	0.16	0.24	0.18
	Standard Deviation	0.91	1.14	0.98
	Minimum Observed	-1.64	-2.76	-2.76
	25th Percentile	-0.51	-0.40	-0.49
	50th Percentile (Median)	-0.01	0.33	0.12
	75th Percentile	0.80	0.95	0.87
	Maximum Observed	2.73	2.25	2.73

Table 2. NIH Toolbox Perceived Stress (theta) – NCS Sample of Pregnant Women		English	Spanish	All
	N	82	43	125
	Mean	0.08	-0.13	0.01
	Standard Deviation	0.89	0.88	0.89
	Minimum Observed	-2.36	-2.76	-2.76
	25th Percentile	-0.47	-0.67	-0.49
	50th Percentile (Median)	0.12	-0.11	0.03
	75th Percentile	0.65	0.53	0.59
	Maximum Observed	2.35	1.67	2.35

Figure 1
Least Squares Means



Section 11: Measure Norms-13-17 Self Report

The following Tables and Figure present NIH Toolbox normative data associated with this measure:

Table 1. Measure Raw/Computed Score, Unadjusted Scale Score, and Fully Adjusted Scale Score Summary (N, Mean, Standard Deviation) by Age Group (13, 14, 15, 16, 17, All)

Table 2. Measure Raw/Computed Score Statistics (N, Mean, Standard Deviation, Minimum/Maximum Observed, 25th/50th/75th Percentile) per Age Group (13, 14, 15, 16, 17, All)

Figure 1. Measure Mean Unadjusted Scale Scores across All Age Groups (13, 14, 15, 16, 17)

Table 1. NIH Toolbox Perceived Stress 13-17 by Age Group	Perceived Stress (theta)			Perceived Stress 13-17 Unadjusted Scale Score			Perceived Stress 13-17 Fully Adjusted Scale Score		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Age Group									
3	0			0			0		
4	0			0			0		
5	0			0			0		
6	0			0			0		
7	0			0			0		
8	0			0			0		
9	0			0			0		
10	0			0			0		
11	0			0			0		
12	0			0			0		
13	217	-0.30	0.54	217	47.00	5.35	209	50.03	5.59
14	234	-0.12	0.51	234	48.82	5.10	226	50.19	5.34
15	222	0.04	0.60	222	50.40	6.01	216	50.10	6.03
16	214	0.02	0.55	214	50.17	5.53	204	50.10	5.42
17	224	-0.04	0.54	224	49.68	5.40	216	50.21	5.44
18 - 29	0			0			0		
30 - 39	0			0			0		
40 - 49	0			0			0		
50 - 59	0			0			0		
60 - 69	0			0			0		
70 - 85	0			0			0		
All	1111	-0.08	0.55	1111	49.27	5.51	1071	50.13	5.56

Table 2. NIH Toolbox Perceived Stress (theta) – Age 13		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	114	103	217	0	0	0	114	103	217
	Mean	-0.45	-0.04	-0.30				-0.45	-0.04	-0.30
	Standard Deviation	0.58	0.46	0.54				0.58	0.46	0.54
	Minimum Observed	-2.53	-2.82	-2.82				-2.53	-2.82	-2.82
	25th Percentile	-1.10	-0.65	-0.93				-1.10	-0.65	-0.93
	50th Percentile (Median)	-0.46	0.05	-0.31				-0.46	0.05	-0.31
	75th Percentile	0.20	0.70	0.33				0.20	0.70	0.33
	Maximum Observed	2.98	2.08	2.98				2.98	2.08	2.98

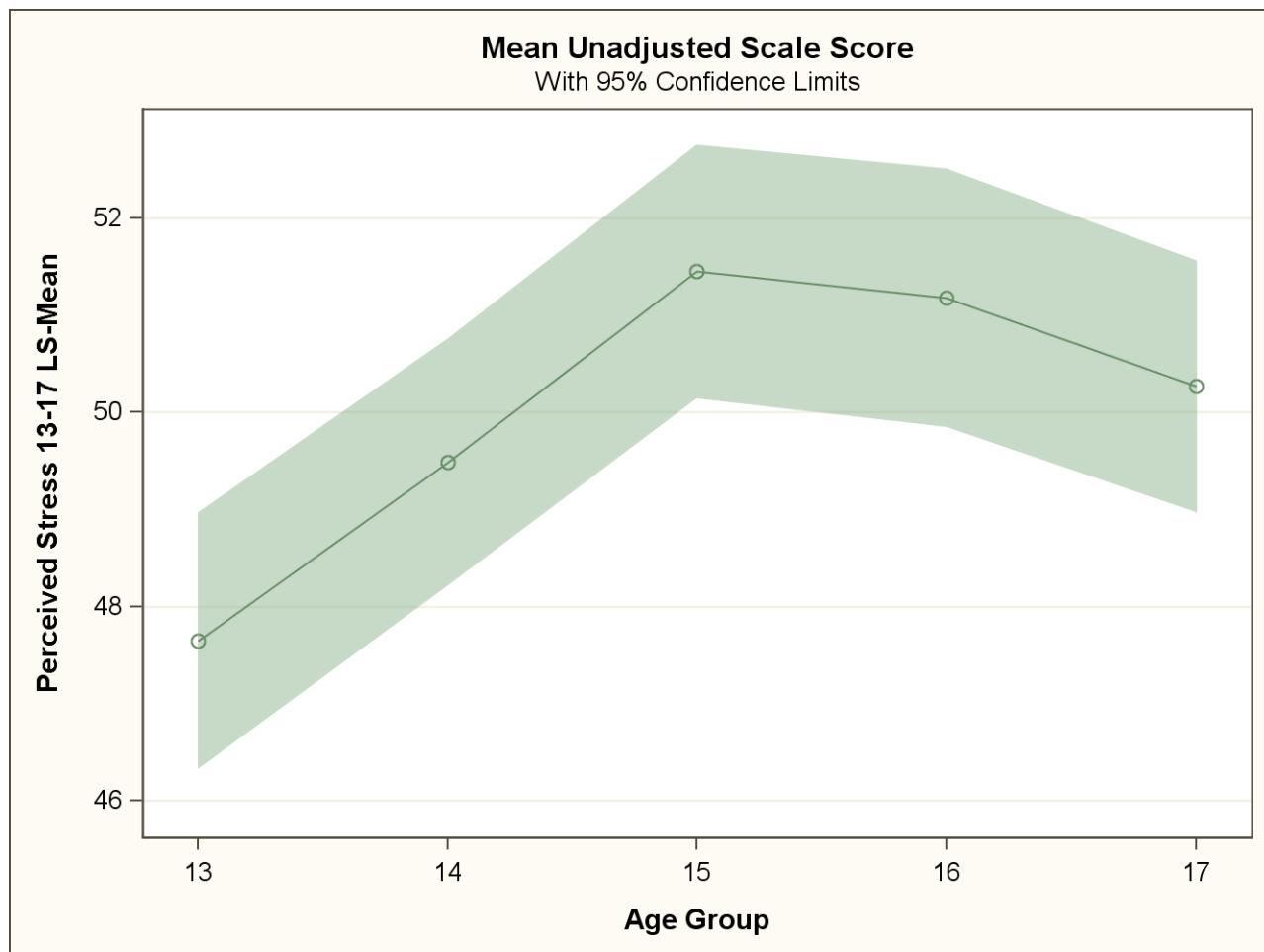
Table 2. NIH Toolbox Perceived Stress (theta) – Age 14		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	113	121	234	0	0	0	113	121	234
	Mean	-0.21	0.01	-0.12				-0.21	0.01	-0.12
	Standard Deviation	0.55	0.46	0.51				0.55	0.46	0.51
	Minimum Observed	-2.73	-2.21	-2.73				-2.73	-2.21	-2.73
	25th Percentile	-0.87	-0.68	-0.82				-0.87	-0.68	-0.82
	50th Percentile (Median)	-0.22	0.19	-0.13				-0.22	0.19	-0.13
	75th Percentile	0.30	0.57	0.45				0.30	0.57	0.45
	Maximum Observed	2.52	2.51	2.52				2.52	2.51	2.52

Table 2. NIH Toolbox Perceived Stress (theta) – Age 15		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	111	111	222	0	0	0	111	111	222
	Mean	-0.19	0.36	0.04				-0.19	0.36	0.04
	Standard Deviation	0.56	0.59	0.60				0.56	0.59	0.60
	Minimum Observed	-2.53	-2.72	-2.72				-2.53	-2.72	-2.72
	25th Percentile	-0.86	-0.37	-0.68				-0.86	-0.37	-0.68
	50th Percentile (Median)	-0.29	0.29	-0.02				-0.29	0.29	-0.02
	75th Percentile	0.35	1.20	0.68				0.35	1.20	0.68
	Maximum Observed	2.31	2.84	2.84				2.31	2.84	2.84

Table 2. NIH Toolbox Perceived Stress (theta) – Age 16		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	107	107	214	0	0	0	107	107	214
	Mean	-0.21	0.35	0.02				-0.21	0.35	0.02
	Standard Deviation	0.58	0.46	0.55				0.58	0.46	0.55
	Minimum Observed	-3.04	-1.93	-3.04				-3.04	-1.93	-3.04
	25th Percentile	-0.80	-0.29	-0.60				-0.80	-0.29	-0.60
	50th Percentile (Median)	-0.18	0.34	0.01				-0.18	0.34	0.01
	75th Percentile	0.44	0.97	0.65				0.44	0.97	0.65
	Maximum Observed	2.01	2.74	2.74				2.01	2.74	2.74

Table 2. NIH Toolbox Perceived Stress (theta) – Age 17		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	111	113	224	0	0	0	111	113	224
	Mean	-0.19	0.21	-0.04				-0.19	0.21	-0.04
	Standard Deviation	0.54	0.51	0.54				0.54	0.51	0.54
	Minimum Observed	-2.25	-3.04	-3.04				-2.25	-3.04	-3.04
	25th Percentile	-0.70	-0.38	-0.58				-0.70	-0.38	-0.58
	50th Percentile (Median)	-0.13	0.30	-0.01				-0.13	0.30	-0.01
	75th Percentile	0.38	0.96	0.60				0.38	0.96	0.60
	Maximum Observed	1.57	2.23	2.23				1.57	2.23	2.23

Figure 1
Least Squares Means



Section 12: Measure Norms-8-12 Parent Report

The following Tables and Figure present NIH Toolbox normative data associated with this measure:

Table 1. Measure Raw/Computed Score, Unadjusted Scale Score, and Fully Adjusted Scale Score Summary (N, Mean, Standard Deviation) by Age Group (8, 9, 10, 11, 12, All)

Table 2. Measure Raw/Computed Score Statistics (N, Mean, Standard Deviation, Minimum/Maximum Observed, 25th/50th/75th Percentile) per Age Group (8, 9, 10, 11, 12, All)

Figure 1. Measure Mean Unadjusted Scale Scores across All Age Groups (8, 9, 10, 11, 12)

Table 1. NIH Toolbox Perceived Stress Parent 8-12 by Age Group	Perceived Stress Parent Report (theta)			Perceived Stress Parent 8-12 Unadjusted Scale Score			Perceived Stress Parent 8-12 Fully Adjusted Scale Score		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Age Group									
3	0			0			0		
4	0			0			0		
5	0			0			0		
6	0			0			0		
7	0			0			0		
8	207	-0.02	0.58	207	49.86	5.95	199	49.95	5.99
9	213	-0.14	0.51	213	48.54	5.26	201	50.02	5.30
10	235	0.10	0.52	235	51.03	5.44	217	50.00	5.43
11	215	0.08	0.48	215	50.82	4.98	205	50.06	5.11
12	216	-0.02	0.55	216	49.79	5.67	206	50.01	5.74
13	0			0			0		
14	0			0			0		
15	0			0			0		
16	0			0			0		
17	0			0			0		
18 - 29	0			0			0		
30 - 39	0			0			0		
40 - 49	0			0			0		
50 - 59	0			0			0		
60 - 69	0			0			0		
70 - 85	0			0			0		
All	1086	0.00	0.53	1086	50.01	5.48	1028	50.01	5.51

Table 2. NIH Toolbox Perceived Stress Parent Report (theta) – Age 8		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	105	102	207	0	0	0	105	102	207
	Mean	0.09	-0.16	-0.02				0.09	-0.16	-0.02
	Standard Deviation	0.66	0.47	0.58				0.66	0.47	0.58
	Minimum Observed	-2.44	-2.10	-2.44				-2.44	-2.10	-2.44
	25th Percentile	-0.66	-0.89	-0.74				-0.66	-0.89	-0.74
	50th Percentile (Median)	0.09	-0.10	0.05				0.09	-0.10	0.05
	75th Percentile	0.73	0.41	0.60				0.73	0.41	0.60
	Maximum Observed	3.04	2.24	3.04				3.04	2.24	3.04

Table 2. NIH Toolbox Perceived Stress Parent Report (theta) – Age 9		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	106	107	213	0	0	0	106	107	213
	Mean	-0.06	-0.26	-0.14				-0.06	-0.26	-0.14
	Standard Deviation	0.62	0.38	0.51				0.62	0.38	0.51
	Minimum Observed	-2.01	-2.44	-2.44				-2.01	-2.44	-2.44
	25th Percentile	-0.91	-0.70	-0.85				-0.91	-0.70	-0.85
	50th Percentile (Median)	-0.03	-0.23	-0.14				-0.03	-0.23	-0.14
	75th Percentile	0.65	0.23	0.46				0.65	0.23	0.46
	Maximum Observed	2.45	2.05	2.45				2.45	2.05	2.45

Table 2. NIH Toolbox Perceived Stress Parent Report (theta) – Age 10		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	119	116	235	0	0	0	119	116	235
	Mean	0.09	0.13	0.10				0.09	0.13	0.10
	Standard Deviation	0.60	0.44	0.52				0.60	0.44	0.52
	Minimum Observed	-2.44	-2.44	-2.44				-2.44	-2.44	-2.44
	25th Percentile	-0.52	-0.42	-0.51				-0.52	-0.42	-0.51
	50th Percentile (Median)	0.05	0.23	0.13				0.05	0.23	0.13
	75th Percentile	0.70	0.79	0.79				0.70	0.79	0.79
	Maximum Observed	2.56	2.27	2.56				2.56	2.27	2.56

Table 2. NIH Toolbox Perceived Stress Parent Report (theta) – Age 11		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	107	108	215	0	0	0	107	108	215
	Mean	0.19	-0.09	0.08				0.19	-0.09	0.08
	Standard Deviation	0.48	0.47	0.48				0.48	0.47	0.48
	Minimum Observed	-1.82	-2.01	-2.01				-1.82	-2.01	-2.01
	25th Percentile	-0.26	-0.80	-0.50				-0.26	-0.80	-0.50
	50th Percentile (Median)	0.15	-0.03	0.06				0.15	-0.03	0.06
	75th Percentile	0.82	0.70	0.78				0.82	0.70	0.78
	Maximum Observed	2.20	1.84	2.20				2.20	1.84	2.20

Table 2. NIH Toolbox Perceived Stress Parent Report (theta) – Age 12		English			Spanish			Total		All
		Males	Females	Total	Males	Females	Total	Males	Females	
	N	100	116	216	0	0	0	100	116	216
	Mean	-0.08	0.05	-0.02				-0.08	0.05	-0.02
	Standard Deviation	0.65	0.44	0.55				0.65	0.44	0.55
	Minimum Observed	-2.44	-2.44	-2.44				-2.44	-2.44	-2.44
	25th Percentile	-0.92	-0.59	-0.65				-0.92	-0.59	-0.65
	50th Percentile (Median)	-0.04	0.03	0.01				-0.04	0.03	0.01
	75th Percentile	0.68	0.62	0.67				0.68	0.62	0.67
	Maximum Observed	3.33	2.50	3.33				3.33	2.50	3.33

Figure 1
Least Squares Means

