CALERIE Phase 2: Scoring Algorithms for QOL and Psychological Assessments

Contents

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RAND SF-36

This instrument consists of 36 questions. The number and choice of responses varies from question to question.

Scoring is done in two steps. First, each response is rescored according to the scoring key below. Then groups of scores are averaged to obtain scores for the eight separate subscales.

Step 1: Recoding

Item Numbers	Original Response	Recoded Value
1, 2, 20, 22, 34, 36	1	100
	2	75
	3	50
	4	25
	5	0
3, 4, 5, 6, 7, 8, 9, 10, 11, 12	1	0
	2	50
	3	100
13, 14, 15, 16, 17, 18, 19	1	0
	2	100
21, 23, 26, 27, 30	1	100
	2	80
	3	60
	4	40
	5	20
	6	0
24, 25, 28, 29, 31	1	0
	2	20
	3	40
	4	60
	5	80
	6	100
32, 33, 35	1	0
	2	25
	3	50
	4	75
	5	100

RAND SF-36 (continued)

Step 2: Average items within each sub-scale to obtain sub-scale scores.

Sub-scale	Score
Physical functioning	Mean of items: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Role limitations due to physical health	Mean of items: 13, 14, 15, 16
Role limitations due to emotional problems	Mean of items: 17, 18, 19
Energy / fatigue	Mean of items: 23, 27, 29, 31
Emotional well being	Mean of items: 24, 25, 26, 28, 30
Social functioning	Mean of items: 20, 32
Pain	Mean of items: 21, 22
General Health	Mean of items: 1, 33, 34, 35, 36

Missing values:
In the Physical functioning scale, if only one item is missing, take the average of the remaining 9 items. Otherwise, if more than one item is missing, the scale score is missing. For all other scales, if one or more items are missing, the entire scale score will be missing.

Interpretation:
For each sub-scale the range is 0-100, with a higher score indicating a more favorable health state.

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Profile of Mood States (POMS)

This questionnaire consists of 65 adjective descriptions of moods, each with responses on a five point scale:

0=Not at all
1=A Little
2=Moderately
3=Quite a Bit
4=Extremely

Items 22 (relaxed) and 54 (efficient) must be reverse scored:
4=Not at all
3=A Little
2=Moderately
1=Quite a Bit
0=Extremely

Scores are obtained for six sub-scales by adding up the scores of responses within that item.

Sub-scale	Score	Range of values
Tension	Sum of items: 2, 10, 16, 20, 22 (reversed), 26, 27, 34, 41	0 – 36
Depression	Sum of items: 5, 9, 14, 18, 21, 23, 32, 35, 36, 44, 45, 48, 58, 61, 62	0 – 60
Anger	Sum of items: 3, 12, 17, 24, 31, 33, 39, 42, 47, 52, 53, 57	0 – 48
Vigor	Sum of items: 7, 15, 19, 38, 51, 56, 60, 63	0 – 32
Fatigue	Sum of items: 4, 11, 29, 40, 46, 49, 65	0 – 28
Confusion	Sum of items: 8, 28, 37, 50, 54 (reversed), 59, 64	0 – 28
Total Mood Disturbance	Tension + Depression + Anger + Fatigue + Confusion – Vigor	

Note: there are 7 dummy items which are not included in any scores.

Missing values:
if less than 10% of items in a subscale are missing, the missing values can be imputed using the mean of the non-missing values in that subscale, before adding up the values for the subscale.

Interpretation:
Lower scores indicate more stable mood profiles.

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Perceived Stress Scale (PSS)

The PSS is a four-item questionnaire about perceived stress with five responses each: never, almost never, sometimes, fairly often and very often, with scores as defined in the following table:

items	Original value	Rescored value
1, 4	Never Almost never Sometimes Fairly often Very often	0 1 2 3 4
2, 3	Never Almost never Sometimes Fairly often Very often	4 3 2 1 0

Global Score for Perceived Stress = sum of rescored values for questions 1-4.
Range = 0 – 16

Missing values:
If any responses are missing, the global score is missing.

Interpretation:
higher scores indicate higher perceived stress level.

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Pittsburgh Sleep Quality Index (PSQI)

This questionnaire consists of 18 questions regarding sleep habits during the past month, yielding seven subscale scores and one total score.

Subscale scores:

Subscale	Items in subscale	Score
Component 1: Subjective sleep quality		Item 9 score: Very Good = 0 Fairly Good = 1 Fairly Bad = 2 Very Bad =3
Component 2: Sleep latency	item 2 score: <= 15 min = 0 16-30 min = 1 31-60 min = 2 >60 min = 3 + item 5a score: Not during the past month = 0 Less than once a week = 1 Once or twice a week = 2 3 or more times a week = 3	Based on item 2 + item 5a: 0 = 0 1 – 2 = 1 3 – 4 = 2 5 – 6 = 3
Component 3: Sleep duration		Item 4 score: >7 hours = 0 6 – 7 hours = 1 5 – 6 hours = 2 < 5 hours =3
Component 4: Sleep efficiency	= 100 x item 4 / (item 3 – item 1)	>85% = 0 75 – 84% = 1 65 – 74% = 2 <65% = 3
Component 5: Sleep disturbance	For each of 5b – 5j, assign scores: Not during the past month = 0 Less than once a week = 1 Once or twice a week = 2 3 or more times a week = 3 add up these scores for 5b – 5j.	Sum of 5b – 5j: 0 = 0 1 – 9 = 1 10 – 18 = 2 19 – 27 = 3
Component 6: Use of sleeping medication		Item 6 score Not during the past month = 0 Less than once a week = 1 Once or twice a week = 2 3 or more times a week = 3

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Subscale	Items in subscale	Score
Component 7: Daytime dysfunction	Item 7 score: Never = 0 Once or twice = 1 Once or twice each week = 2 3 or more times each week = 3 + item 8 score: No problem at all = 0 Only a very slight problem = 1 Somewhat of a problem = 2 A very big problem = 3	Sum of item 7 and item 8 scores: 0 = 0 1 – 2 = 1 3 – 4 = 2 5 – 6 = 3
Global PSQI score		Sum of components 1 - 7

The Range for each subscale is 0 – 3. the range for the global PSQI score is 0 – 21.

Missing values:
if any item within a subscale is missing, the entire subscale score will be missing.

Interpretation:
higher scores indicate lower sleep quality

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Derogatis Interview for Sexual Functioning - Self Report (DISF-SR)

This instrument has 25 questions regarding sexual function, with parallel versions for men and women. Both forms assess five dimensions of sexual function, yielding five subscale scores and a total score.

Scores for individual items are as they appear on the form. These scores are shown below:

items	Original value	Score
1.1–1.5, 2.1–2.3, 3.1–3.5, 5.1 2.4-2.5 (male version)	Not at all Less than 1 per month 1 or 2 per month 1 per week 2 or 3 per week 4 to 6 per week 1 per day 2 or 3 per day 4 or more per day	0 1 2 3 4 5 6 7 8
2.4–2.5 (female version)	Never Rarely Sometimes Usually Always	0 1 2 3 4
4.1 – 4.6, 5.2 – 5.3	Not at all Slightly Moderately Highly Extremely	0 1 2 3 4
5.4	Could not be worse Very poor Poor Somewhat inadequate Adequate Above average Good Very good Could not be better	0 1 2 3 4 5 6 7 8

Subscale scores:

Domain	Score	Range
1: Sexual Cognition / Fantasy	Sum of scores for items 1.1 – 1.5	0 – 40
2: Sexual arousal	Sum of scores for items 2.1 – 2.5	0 – 32 (females), 0 – 40 (males)
3: Sexual Behavior / Experiences	Sum of scores for items 3.1 – 3.5	0 – 40
4: Orgasm	Sum of scores for items 4.1 – 4.6	0 – 24
5: Drive and relationship	Sum of scores for items 5.1 – 5.4	0 – 24
Total score	Sum of domains 1 - 5	0 – 160

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Missing values:

If more than one item is missing in any domain, the domain score will be missing. If only one item is missing in a domain, its value will be replaced with the average of the non-blank items in that domain.

T scores:
Tables are provided with t-scores for the 5 individual domains and the total score for males and females.

Interpretation:
Higher scores indicate higher sexual function.

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Food Craving Questionnaire – Trait (FCQ-T)

This questionnaire has 39 items concerning food cravings across times and situations, and provides scores on nine subscales. Each question has 5 choices:

Never or NA = 1
Rarely = 2
Sometimes = 3
Often = 4
Usually = 5
Always = 6

Subscale scores:

subscale	Score	Range
Intent	Sum of items 5, 18, 23	3 – 18
Positive Anticipation	Sum of items 9, 10, 15, 24, 38	5 – 30
Negative Anticipation	Sum of items 16, 19, 21	3 – 18
Control	Sum of items 2, 3, 22, 25, 26, 29	6 – 36
Thoughts	Sum of items 6, 8, 27, 28, 31, 32, 33	7 – 42
Hunger / Physiological	Sum of items 11, 12, 13, 14	4 – 24
Emotions / negative affect	Sum of items 20, 34, 30, 39	4 – 24
Cues / environment	Sum of items 1, 35, 36, 37	4 – 24
Guilt	Sum of items 4, 7, 17	3 – 18

Missing values:
if one or more items within a subscale are missing, the subscale score will be missing.

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Food Craving Questionnaire – State (FCQ-S)

This questionnaire has 15 items regarding eating habits at the current moment. Scores are produced for five subscales. Each item has 5 possible responses:

Strongly disagree = 1
Disagree = 2
Neutral = 3
Agree = 4
Strongly agree = 5

Subscale scores:

subscale	Score	Range
Desire	Sum of items 1, 2, 3	3 – 15
Anticipation positive reinforcement	Sum of items 4, 5, 6	3 – 15
Anticipation negative	Sum of items 7, 8, 9	3 – 15
Lack of control	Sum of items 10, 11, 12	3 – 15
Hunger / physiological	Sum of items 13, 14, 15	3 – 15

Missing values:
if one or more items within a subscale are missing, the subscale score will be missing.

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Food Craving Inventory (FCI-II)

This inventory consists of 28 food items from four food groups, carbohydrates, sweets, fats and fast foods. Craving for each item is reported on a 5 point scale:

Never = 1
Rarely = 2
Sometimes = 3
Often = 4
Always / Almost every day = 5

Subscale Scores:

Subscale	Score	Range
Carbohydrates	Sum of items: 5, 9, 12, 14, 18, 21, 22, 28	8 – 40
Sweets	Sum of items: 1, 8, 13, 16, 17, 23, 24, 25	8 – 40
Fats	Sum of items: 3, 4, 6, 10, 15, 19, 26, 27	8 – 40
Fast Foods	Sum of items: 2, 7, 11, 20	4 – 20

Missing values:
if one or more items from any subscale is missing, the entire subscale score is missing.

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Eating Inventory

This inventory consists of 51 statements about eating behavior, with varying response choices, which are used to produce scores on three factors, restraint, disinhibition and perceived hunger, and additional subscales.

Items 1-36 are True or False questions, which are scored as 0/1 or 1/0 depending on the question. Items 37-50 have four choices each and item 51 has 6 choices, all of which are rescored to 0 / 1. The following table specifies how individual questions are rescored.

Step 1: recoding

Items	Original value	Rescored value
1 – 9, 11 – 15, 17 – 20, 22 – 24, 26 – 29, 32 – 36	True False	1 0
10, 16, 21, 25, 30, 31	True False	0 1
37 – 46, 48 – 50	1 2 3 4	0 0 1 1
47	1 2 3 4	1 1 0 0
51	1 2 3 4 5 6	0 0 0 1 1 1

Step 2: scoring of scales and sub-scales
(using rescored values for each item)

Scale	Score	Range
Restraint (Factor 1)	sum of items: 4, 6, 10, 14, 18, 21, 23, 28, 30, 32, 33, 35, 37, 38, 40, 42, 43, 44, 46, 48, 50	0 – 21
Disinhibition (Factor 2)	Sum of items: 1, 2, 7, 9, 11, 13, 15, 16, 20, 25, 27, 31, 36, 45, 49, 51	0 – 16
Perceived Hunger (Factor 3)	Sum of items: 3, 5, 8, 12, 17, 19, 22, 24, 26, 29, 34, 39, 41, 47	0 – 14
Flexible Restraint	Sum of items: 4, 6, 3, 28, 35, 42, 48	0 – 7
Rigid Restraint	Sum of items: 14, 32, 37, 38, 40, 43, 44	0 – 7
Habitual Disinhibition	Sum of items: 11, 36, 45, 49, 51	0 – 5

Eating Inventory (continued)

Scale	Score	Range
Situational Disinhibition	Sum of items: 2, 7, 13, 15, 16	0 - 5
Emotional Disinhibition	Sum of items: 9, 20, 27	0 – 3
Internal Hunger	Sum of items: 3, 5, 12, 24, 34, 39	0 – 6
External Hunger	Sum of items: 8, 19, 22, 26, 41, 47	0 – 6

Missing values:
if less than 10% of the items in a scale are missing, the missing values can be imputed as the mean of the non-missing values, before adding up the values in the scale.

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Weight Efficacy Lifestyle

This questionnaire consists of 20 statements regarding ability to resist eating under different circumstances. Each item is scored on a 10 point scale from 0-9, with 0 representing "Not confident at all that you can resist the desire to eat", and 9 representing "Very confident that you can resist the desire to eat". There are 5 component scales and one global scale.

Component scores:

Subscale	Score	Range
Negative emotions	Sum of items: 1, 6, 11, 16	0 – 36
Availability	Sum of items: 2, 7, 12, 17	0 – 36
Social Pressure	Sum of items: 3, 8, 13, 18	0 – 36
Physical discomfort	Sum of items: 4, 9, 14, 19	0 – 36
Positive activities	Sum of items: 5, 10, 15, 20	0 - 36
Global score	Sum of all 5 component scales	0 - 180

Note: sometimes means are used instead of sums

Missing values:
if one or more items from any subscale is missing, the entire subscale score is missing.

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Multiaxial Assessment of Eating Disorder Symptoms (MAEDS)

This questionnaire is composed of 56 statements about food and mood related behaviors. Each item has 7 choices. All items except 11, 12, 23, 32, and 56 are scored as:

1=Never
2=Very Rarely
3=rarely
4=Sometimes
5=Often
6=Very Often
7=Always

Items 11, 12, 23, 32 and 56 are reverse scored:

1=Always
2=Very Often
3=Often
4=Sometimes
5=Rarely
6=Very Rarely
7=Never

Component scores (use scores defined above)

Subscale	Score	Range
Depression	Sum of items: 2, *11*, *12*, 13, 16, 24, 29, 30, 33, 39, 51	11 – 77
Binge Eating	Sum of items: 5, 19, 22, 26, 27, 48, 49, 54	8 – 56
Purgative Behavior	Sum of items: 6, 9, 15, 17, 21, 35, 37	7 - 49
Fear of Fatness	Sum of items: 7, 20, *23*, 25, 28, 36, 40, 43, 47, 55, *56*	11 – 77
Restrictive Eating	Sum of items: 1, 3, 14, *32*, 42, 44, 45, 50, 53	9 – 63
Avoidance of Fear Foods	Sum of items: 4, 8, 10, 18, 31, 34, 38, 41, 46, 52	10 – 70

T-scores:
There is a MAEDS Norms Table for converting each raw subscale score to a T score. The T-scores range from 22 to 112, with a mean of 50 and SD of 10 for Females.

** we don't have a norms table for males.

Missing values:
for the subscales composed of less than 10 items (Binge eating, Purgative behavior, and Restrictive eating subscales), if any component items are missing, the entire subscale score will be missing. For the Depression, Fear of Fatness and Avoidance of fear foods subscales, if one item is missing, the mean of the remaining items can be used to impute the value of the missing item before summing. If more than one item is missing in these subscales, the entire subscale score will be missing.

Body Shape Questionnaire (BSQ)

This questionnaire consists of 34 questions regarding feelings about body appearance. Each question has six choices:

Never = 1
Rarely = 2
Sometimes = 3
Often = 4
Very Often = 5
Always = 6

Score:
A single score is calculated by adding up the scores of all 34 questions, with a range of 34 – 204.

Missing values:
if more than 3 items are missing a response, the score will be missing. If there are three or fewer missing values, each of the missing values can be imputed using the mean of all the non-missing values before summing.

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Beck Depression Inventory – II (BDI-II)

This instrument consists of 21 items, each with 4 or 6 statements regarding symptoms of depression. One statement is selected for each item. Each statement has an associated value. Two of the items' values are recoded for scoring, while the others retain their original value.

Group	Original value	Rescored value
1 – 15, 17, 19 - 21	0 1 2 3	0 1 2 3
16, 18	0 1 2 3 4 5 6	0 1 1 2 2 3 3

Score
A single score is calculated by adding up the (rescored) values of the 21 items. The range of values is 0 – 63.

Missing values:
if more than 2 items have missing values, the total BDI score will be missing. If one or two items are missing, their score can be imputed with the mean of the non-missing scores before summing.

Interpretation:
0 – 13: minimal depression
14 – 19: mild depression
20 – 28: moderate depression
29 – 63: severe depression