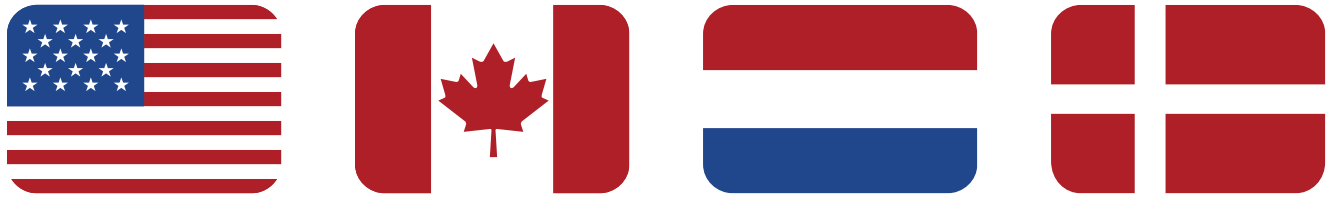
MEASURING CONSENSUS-BASED PATIENT-REPORTED OUTCOMES IN WEIGHT LOSS TREATMENT: DEVELOPMENT AND VALIDATION OF A BODY-Q SHORT FORM SCALE (BODY-Q-7-D)

Anne Klassen, Charlene Rae, Claire de Vries, Farima Dalaei, Lucas Gallo, Manraj Kaur, Maarten Hoogbergen, Stefan Cano, Andrea Pusic



Conflict of Interest

Grant Support: Canadian Institutes for Health Research, Plastic Surgery Foundation

Consultant: Allergan/AbbVie, Merz, Ipsen

Royalty (IP): Q-Portfolio use in for-profit studies

ACNE-Q

BODY-Q

BREAST-Q

CLEFT-Q

EAR-Q

FACE-Q

GENDER-Q

HAND-Q

LIMB-Q

LYMPH-Q

NAIL-Q

SCAR-Q

SKIN-Q

WOUND-Q

Q-PORTFOLIO

BODY-Q – Obesity and Body Contouring

Conceptual Framework

19 original (PRS, 2016) + 12 new scales = 31

APPEARANCE

- Abdomen
- Arms
- Back
- Body
- Buttocks
- Cellulite
- Chest
- Décolletage
- Hips & Outer Thighs
- Inner Thighs
- Nipples
- Scars
- Skin
- Stretchmarks

EATING CONCERNS

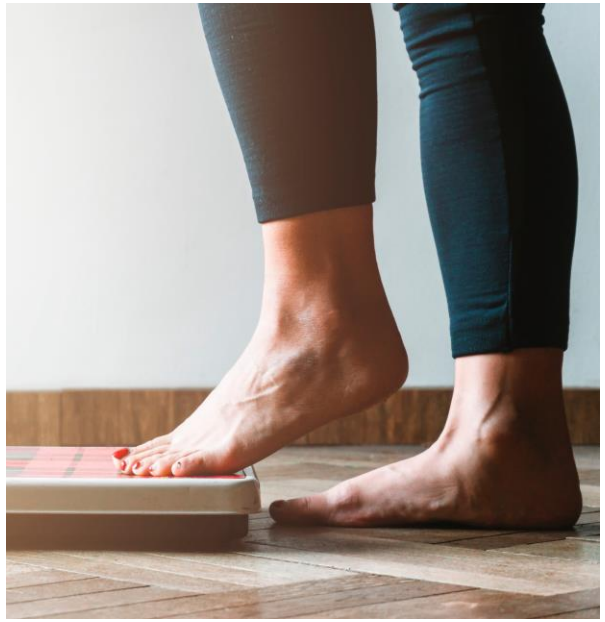
- Eating Behavior
- Eating-Related Distress
- Eating-Related Symptoms

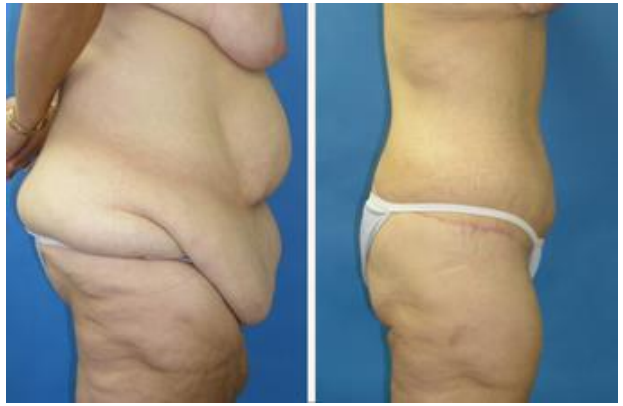
HEALTH-RELATED QUALITY OF LIFE

- Appearance Distress
- Body Image
- Expectations: Cosmetic
- Expectations: Weight Loss
- Physical Function
- Physical Symptoms
- Psychological
- Sexual
- Social
- Work Life

EXPERIENCE OF CARE

- Doctor
- Information
- Medical Team
- Office Staff





BODY-Q Obesity Module

Eating Behaviour

Feel satisfied

Eat healthy food

Show self-control

Feel in control

Chew thoroughly

Eat right amount

Eat at right speed

Avoid snack foods

Stop before full

Body Image

Positive toward body

Not perfect but like it

Happy with body

Proud of body

Think body attractive

Feel good naked

Have body I want

Physical Function

Get up from bed

Bend side to side

Walk or move around

Bend over

Moderate exercise

Up down stairs

Stand a long time

Psychological

Believe in myself

Proud of myself

Happy

Like myself

Emotionally strong

In control of my life

Confident

Accept myself

Comfortable

Feel great

Sexual

Fulfilling

Undress

Satisfied sex life

Lights on

Attractive naked

Social

With people I know

People listen

Accepted by people

Included

First impression

Take part in life

Make new friends

Group situations

People I don’t know

Walk into a room

OBJECTIVE

To develop a new BODY-Q scale suitable for generating preference-based values for use in economic evaluations.

Standardizing Quality of life measures in Obesity Treatment

Survey 1

What to Measure

25 PROs

111 PLWO + HCPs

Survey 2

How to Measure

17 PROMs

86 PLWO + HCPs

Face-to-Face Consensus Meeting Sept 2019, Amsterdam

16 PLWO + 19 HCPs

S.Q.O.T. consensus meeting results

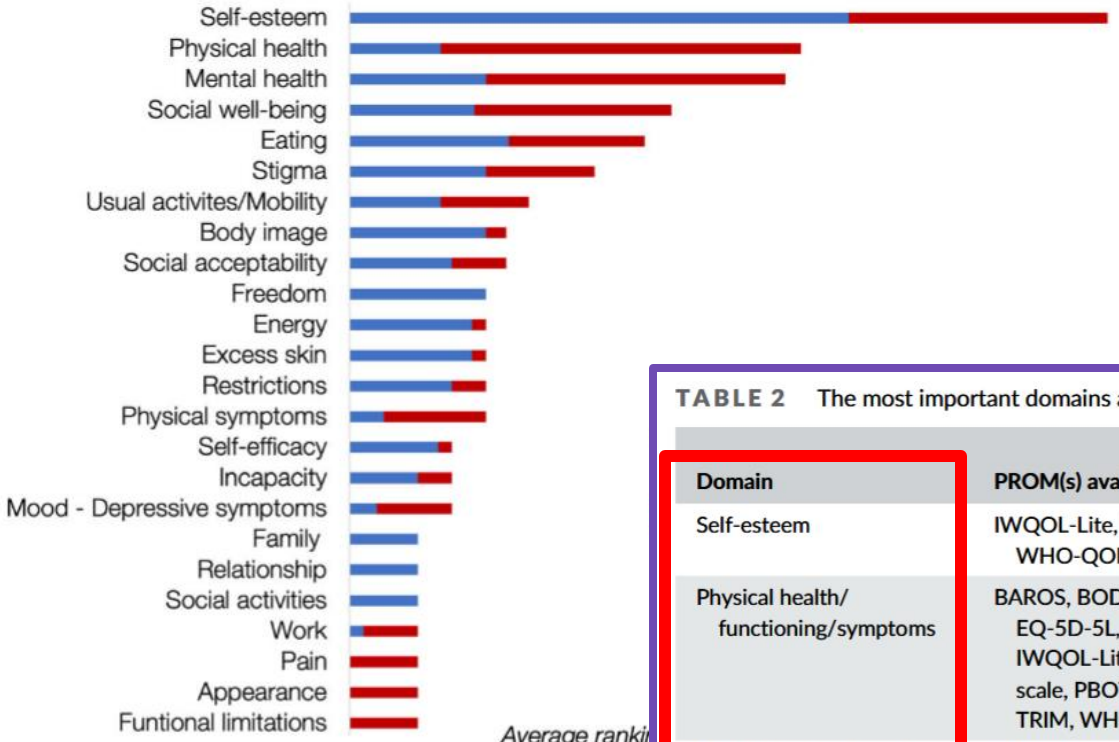


FIGURE 1 Ranking of the patient-reported outcomes (PROs) in the face-to-face consensus meeting, showing results for people living with obesity and healthcare providers

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OBESITY TREATMENT/RESEARCH

OBESITY REVIEWS WILEY

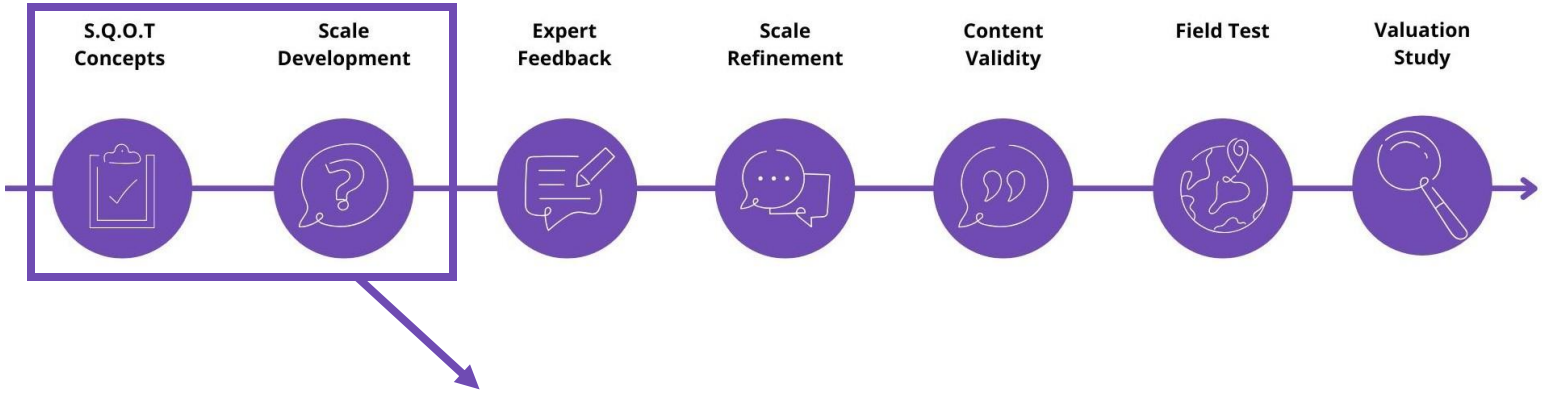
Outcomes of the first global multidisciplinary consensus meeting including persons living with obesity to standardize patient-reported outcome measurement in obesity treatment research

Claire E. E. de Vries[1] | Caroline B. Terwee[2] | May Al Nawas[3] | Bart A. van Wagensveld[4] | Ignace M. C. Janssen[5] | Ronald S. L. Liem[6,7] | Simon W. Nienhuijs[8] | Ricardo V. Cohen[9] | Elisabeth F. C. van Rossum[10,11] | Wendy A. Brown[12] | Amir A. Ghaferi[13] | Johan Ottosson[14] | Karen D. Coulman[15] | Tarissa B. Z. Petry[9] | Stephanie Sogg[16] | Lisa West-Smith[17] | Jason C. G. Halford[18] | Ximena Ramos Salas[19,20] | John B. Dixon[21] | Salman Al-Sabah[22] | Wei-Jei Lee[23] | John Roger Andersen[24,25] | Stuart W. Flint[18,26] | Maarten M. Hoogbergen[27] | Brooke Backman[28] | Ellen Govers[29] | Nadya Isack[30] | Caroline Clay[31] | Susie Birney[32] | Maureen Gunn[32] | Paul Masterson[32] | Audrey Roberts[32] | Jacky Nesbitt[32] | Riccardo Meloni[33] | Sarah le Brocq[34] | Sandra de Blaeij[35] | Christina Kraaijveld[33] | Floor van der Steen[33] | Bibian Visser[33] | Petra Hamers[33] | Valerie M. Monpellier[5]

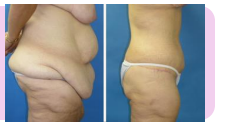
TABLE 2 The most important domains and the selected PROMs

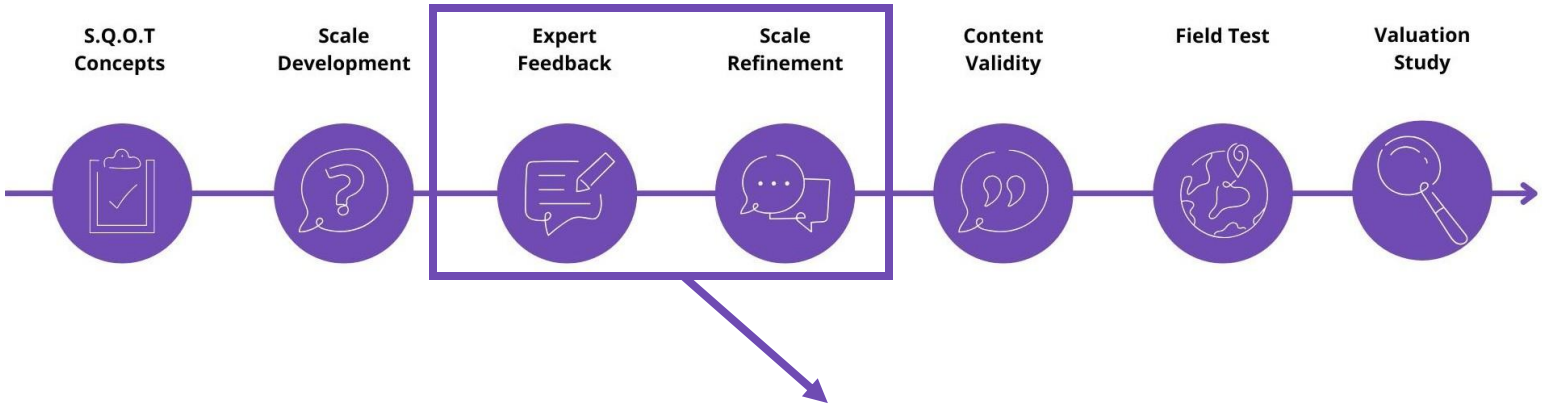
Domain	PROM(s) available	PROM(s) selected based on face validity	PROM(s) that were selected after the vote[a]
Self-esteem	IWQOL-Lite, IWQOL-Lite CT, PROS, WHO-QOL BREF	IWQOL-Lite, IWQOL-Lite CT	IWQOL-Lite
Physical health/ functioning/symptoms	BAROS, BODY-Q, BC EQ-5D-5L, GIQLI, IWQOL-Lite CT, M scale, PBOT, PROS TRIM, WHO-QOL		
Mental/psychological health	BAROS, BODY-Q, BC Lite CT, M-A QOL WHO-QOL BREF		
Social health	BAROS, BODY-Q, BC EQ-5D-5L, GIQLI, IWQOL-Lite CT, M Scale, PBOT, PROS TRIM, WHO-QOL BREF		
Stigma	—	—	—
Eating	BODY-Q, BOSS, M-A QOL QII, QOLOS, TRIM	BODY-Q, BOSS, QOLOS	BODY-Q
Body image	BODY-Q, QOLOS	BODY-Q, QOLOS	BODY-Q, QOLOS
Excess skin	BODY-Q, QOLOS	BODY-Q, QOLOS	BODY-Q, QOLOS

A number of concepts are not captured in generic PBM (eg, EQ-5D)



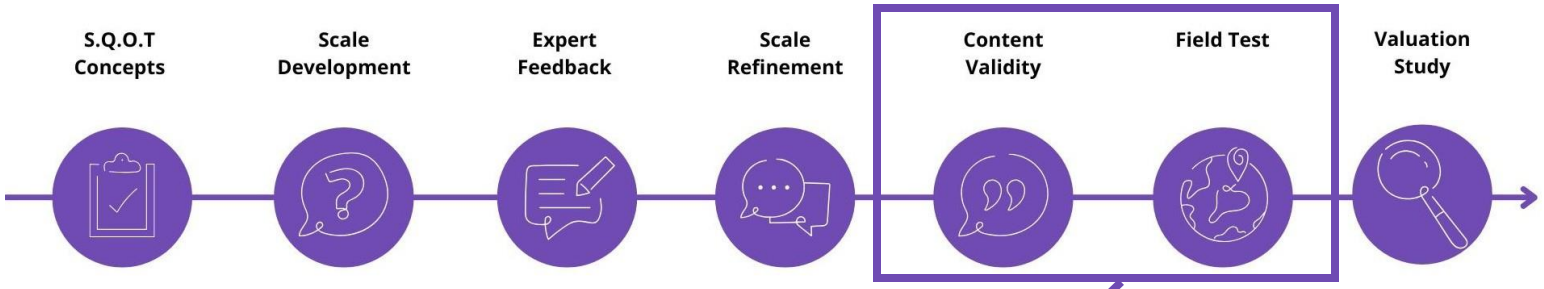
Concepts from the BODY-Q were mapped onto the 8 PROs from the S.Q.O.T. initiative to form a draft instrument.

- Social 
- Physical 
- Psychological 
- Stigma 
- Eating behavior 
- Body image 
- Self-esteem 
- Excess Skin 



Refined based on feedback from 16 members of the S.Q.O.T. expert committee:

- 2 obesity doctors
- 1 endocrinologist
- 2 psychologists
- 2 dietitians
- 2 health economists
- 1 nurse practitioner
- 3 surgeons
- 3 researchers



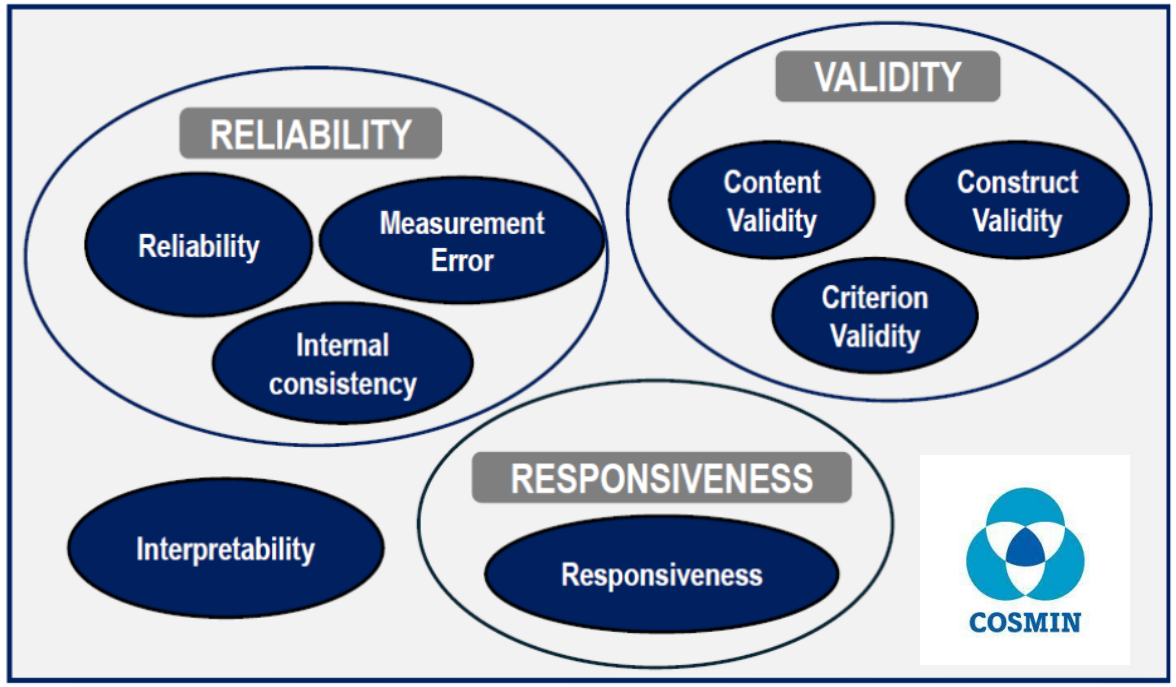
Psychometric properties

Prolific

International sample

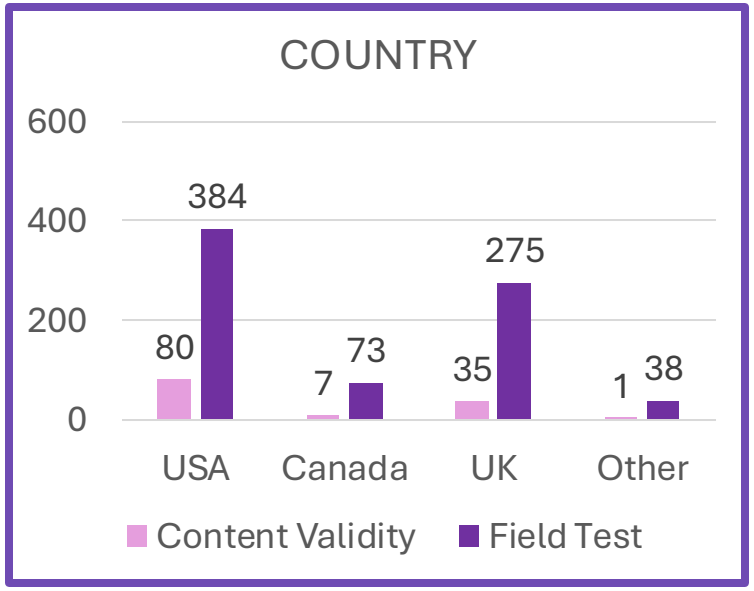
Content validity = 123

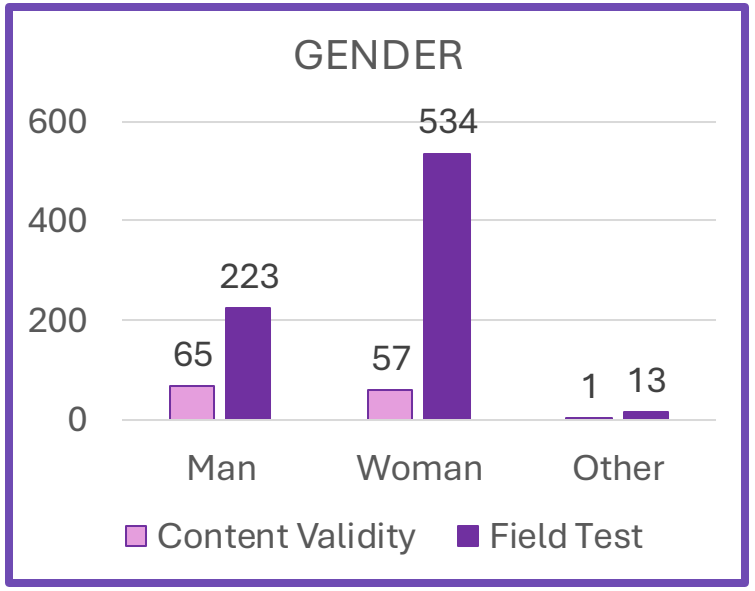
Field test = 770

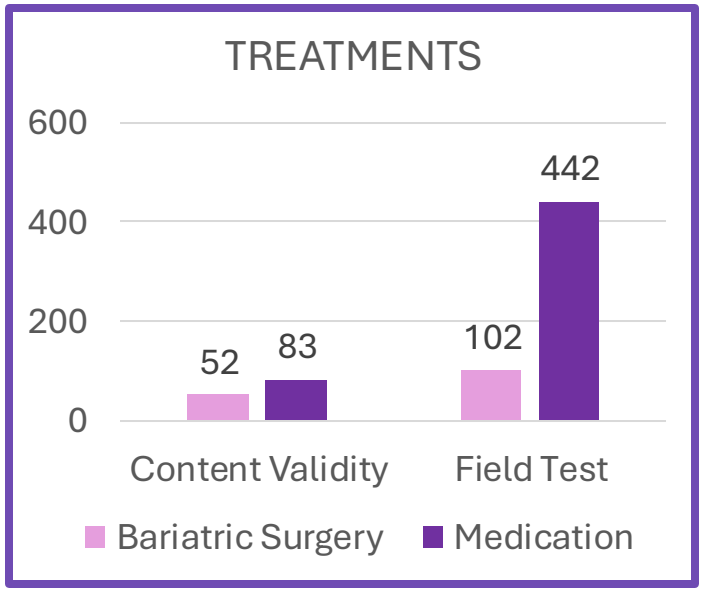


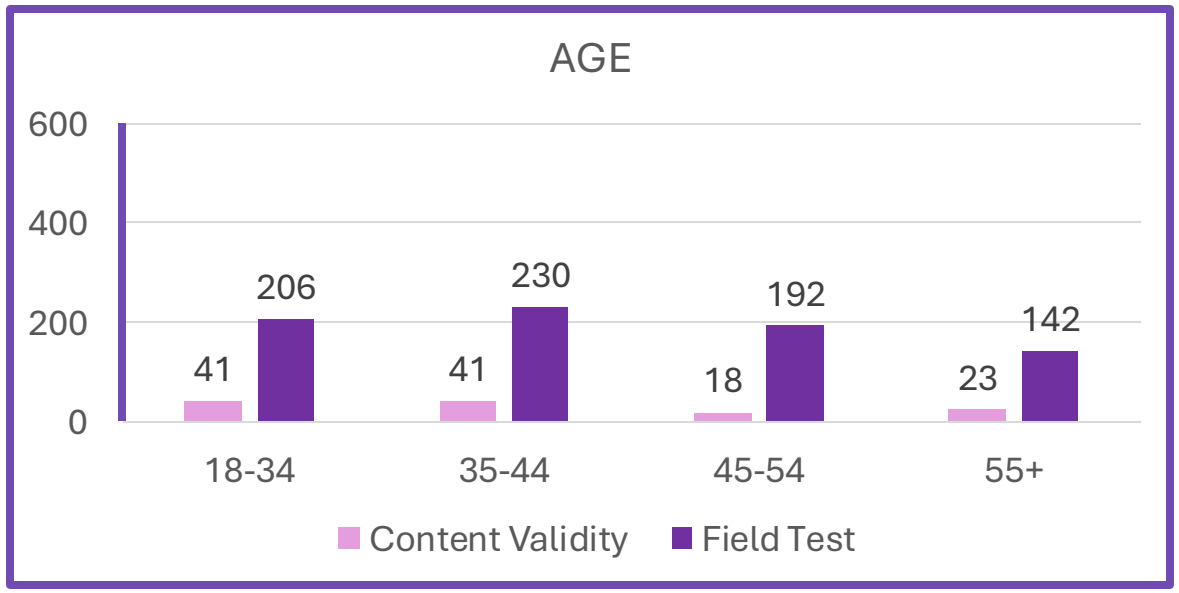
RESULTS

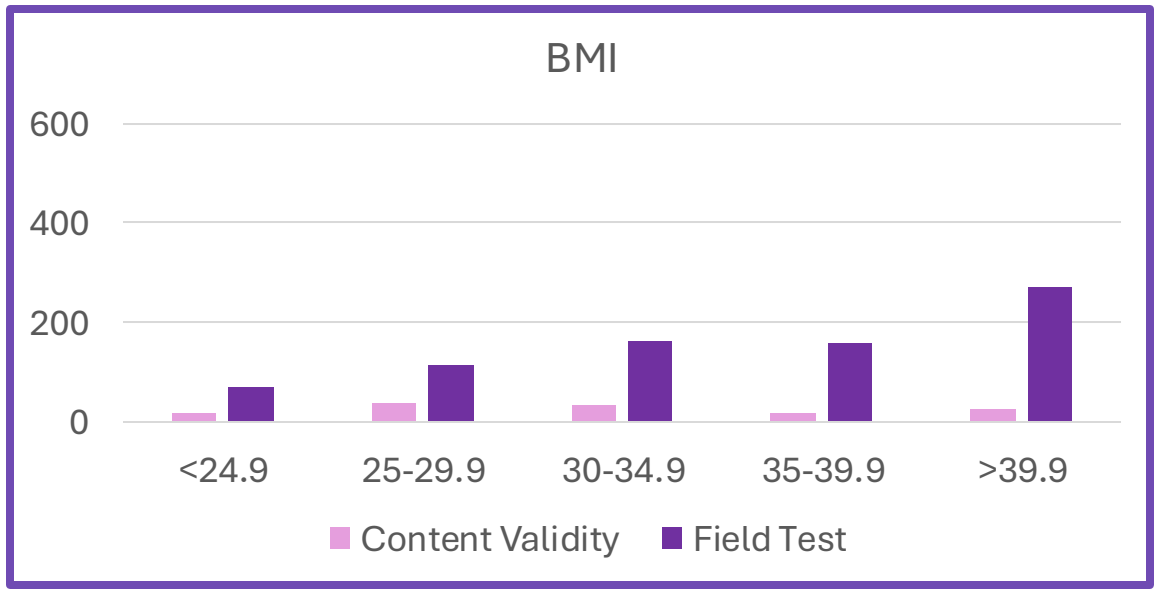
Content validity = 123 / Field test = 770

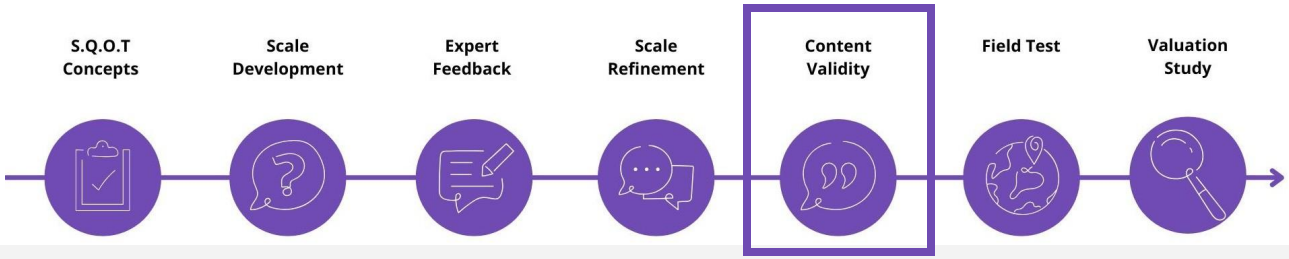












BODY-Q QUESTIONNAIRE

These questions ask about the impact of your WEIGHT on your HEALTH. Please answer each question based on the PAST WEEK.

1) How difficult was it for you to walk or move around?

- ☐ It was NOT difficult.

6) How did you feel about yourself?

- ☐ I ALWAYS felt good about myself.
- ☐ I OFTEN felt good about myself.
- ☐ I SOMETIMES felt good about myself.
- ☐ I NEVER felt good about myself.

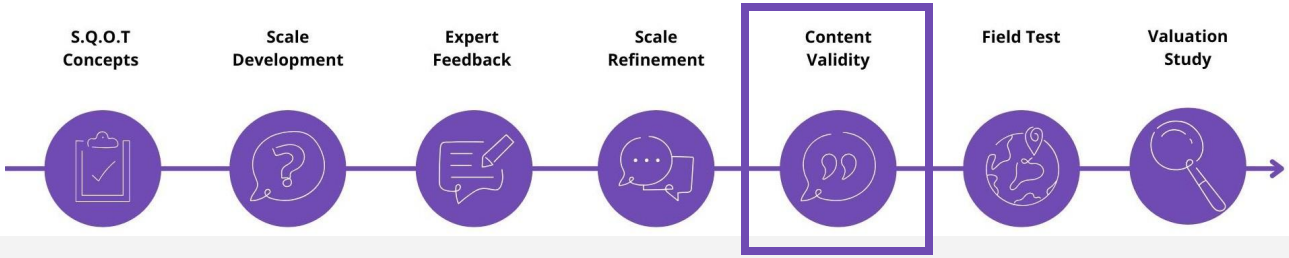
INSTRUCTIONS: 100% participants found them easy to understand

TIME FRAME: 96% participants were able to answer based on PAST WEEK

- ☐ I OFTEN felt good about my body.
- ☐ I SOMETIMES felt good about my body.
- ☐ I NEVER felt good about my body.

11) Did you experience any unpleasant symptoms due to excess skin caused by weight loss?

- ☐ I had NO unpleasant symptoms.
- ☐ I had MILD unpleasant symptoms.
- ☐ I had MODERATE unpleasant symptoms.
- ☐ I had SEVERE unpleasant symptoms.



BODY-Q QUESTIONNAIRE

These questions ask about the impact of your WEIGHT on your HEALTH. Please answer each question based on the PAST WEEK.

1) **How difficult was it for you to walk or move around?**
- ☐ It was NOT difficult.
- ☐ It was a LITTLE difficult.
- ☐ It was MODERATELY difficult.
- ☐ It was EXTREMELY difficult.

6) **How did you feel about yourself?**
- ☐ I ALWAYS felt good about myself.
- ☐ I OFTEN felt good about myself.
- ☐ I SOMETIMES felt good about myself.
- ☐ I NEVER felt good about myself.

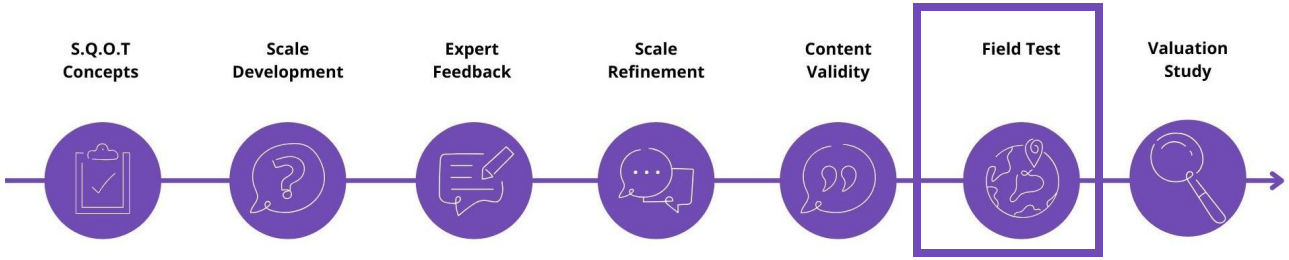
7) **How often did you feel accepted by other people?**
- ☐ I ALWAYS felt accepted.
- ☐ I OFTEN felt accepted.
- ☐ I SOMETIMES felt accepted.

RESPONSE OPTIONS: 97% participants found each response option set easy to understand and fit their experience

ITEMS: 91% participants found each item easy to understand and relevant

- ☐ I NEVER felt good about my body.

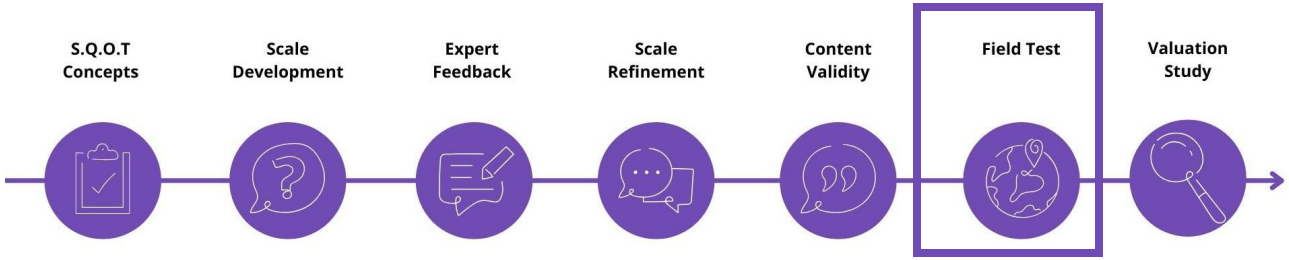
- ☐ I had MILD unpleasant symptoms.
- ☐ I had MODERATE unpleasant symptoms.
- ☐ I had SEVERE unpleasant symptoms.



Looked at multiple factors to decide which items to drop

	Floor	Low	Middle	Ceiling
Excess Skin - unpleasant symptoms	17	94	180	479
Physical - walk or move	36	101	216	417
Social - usual activities	67	163	235	305
Physical moderate exercise	79	133	262	296
Psych - emotional distress	94	253	266	157
Eating - difficult control	174	191	258	147
Eating - often control	115	336	200	119
Stigma - feel accepted	111	308	241	110
Body Image - self-conscious	314	265	135	56
Self Esteem - feel about self	214	371	152	33
Body Image - feel about body	406	277	76	11

Response options varied according to the BODY-Q-SF item: 0=extremely/ severe/ never; 1=moderately/ moderate/ sometimes/; 2=little/ mild/ often; 3=not/ no/ always



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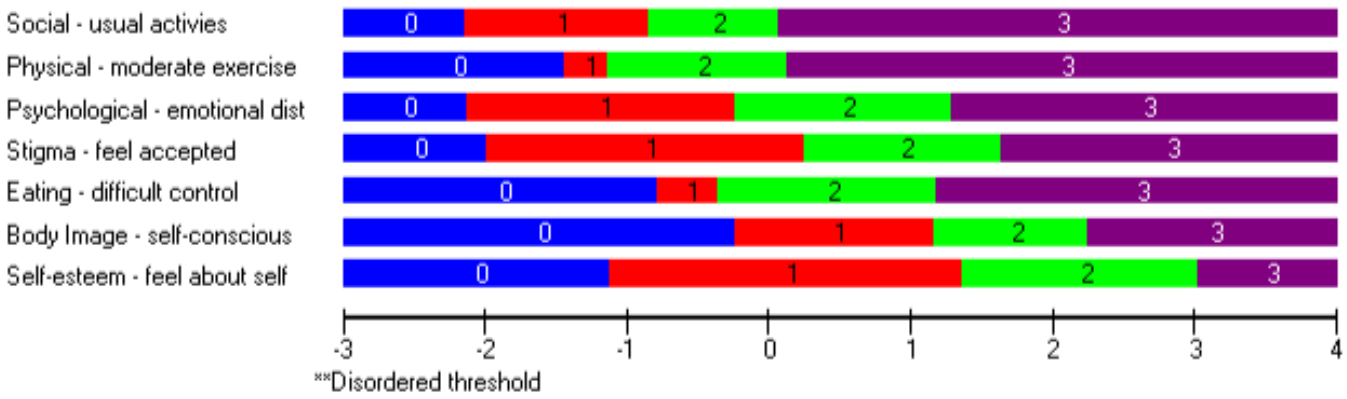
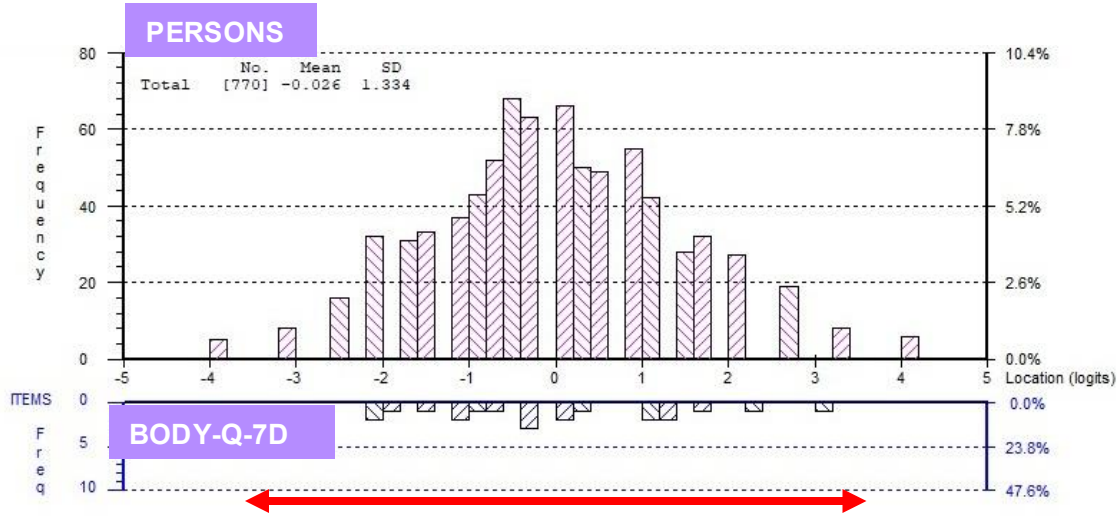
Rasch Measurement Theory analysis

Response options



Person-Item Threshold Distribution



98.6% of sample scored on scale

Items fit Rasch model with ordered thresholds and evidenced structural independence (i.e., residuals correlations <0.2). Reliability >0.80.

Classical Test Theory analysis

Test-retest reliability

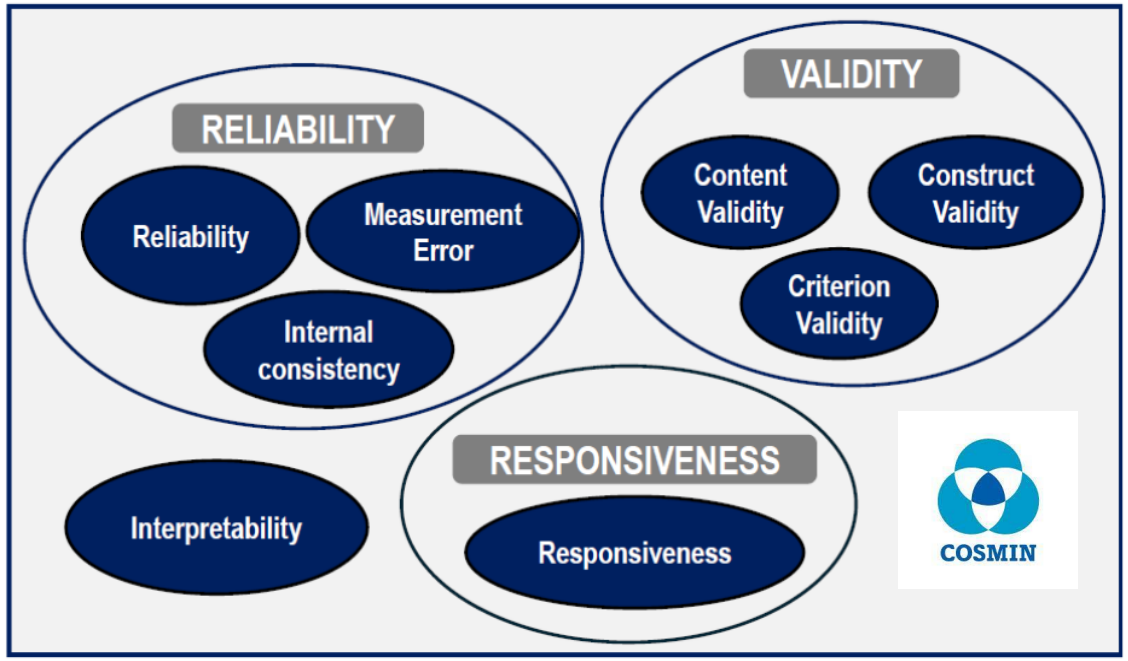
N=269; R=0.81

COSMIN ≥0.70

Hypothesis-based construct Validity

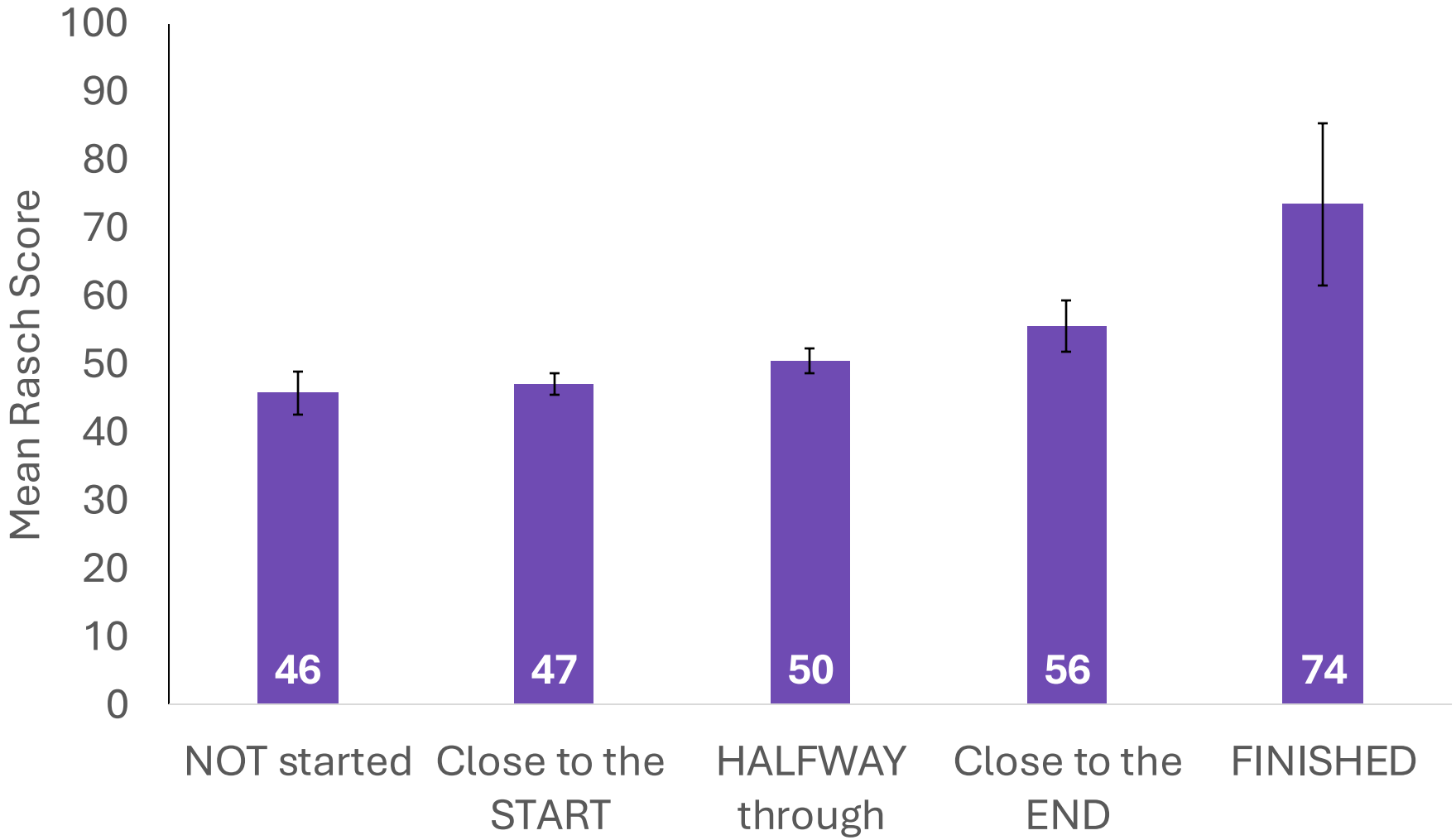
34/44 (77.3%) hypotheses accepted

COSMIN ≥75%

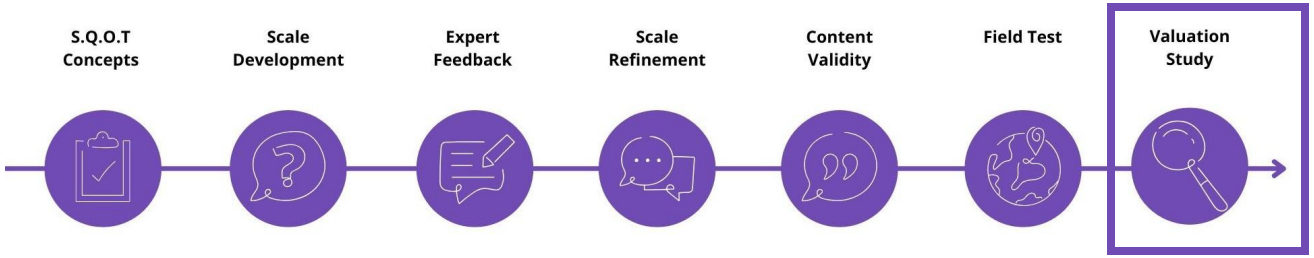


Hypothesis-based Construct Validity

BODY-Q-7D scores would incrementally increase throughout weight loss journey



Conclusions



- BODY-Q-7D was developed with extensive input from people living with obesity and experts
- BODY-Q-7D measures outcome domains important in the multidisciplinary management of obesity.
- BODY-Q-7D health state valuation study needed.

Obesity

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ORIGINAL ARTICLE OPEN ACCESS

Clinical Trials and Investigations

BODY-Q-7D Measures Consensus-Based Patient-Reported Outcomes for the Management of Obesity Treatment

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Keywords: BODY-Q | health-related quality of life | preference-based measure | weight loss

ABSTRACT

Objective: A global multidisciplinary consensus initiative identified eight patient-reported outcome domains important in obesity care: self-esteem; physical, mental, and social health; eating; stigma; body image; and excess skin. Several of these domains are not represented in generic preference-based measures typically used in weight loss research. We developed the BODY-Q-7 Dimensions (BODY-Q-7D) to provide a valuation-ready framework for a preference-based instrument.

Methods: Concepts from the BODY-Q were used to inform the development of items that covered the eight consensus initiative domains. Psychometric performance of the BODY-Q-7D was examined using an online international sample (i.e., Prolific).

Results: Content validity was established with 123 participants. The field test included 770 participants, of whom 269 completed a test–retest, and 599 completed a 3-month follow-up. Rasch Measurement Theory analysis reduced the BODY-Q-7D to 7 items. Items fit the Rasch model with ordered thresholds and structural independence. Reliability was >0.80 across three reliability coefficients. Hypothesis-based tests of construct validity and responsiveness were supported with 22/28 (79%) and 12/16 (75%) tests accepted.

Thank you!

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