Capabilities of Upper Extremities Instrument (CUE)

Assessment Overview

Assessment Area

ICF Domain:

Activity

Subcategory:

Mobility

You Will Need

Length:
32 item – around 30 minutes

Scoring:
7-point scale (1 = "Totally limited, can't do at all", 7 = "Not at all limited". Sum of item scores range from 32 to 224 (higher scores reflecting better function). Left and right arm/hand function can be derived separately. Percent of normal function score calculated using: (total score – 32) / 192 * 100%.

Summary

The Capabilities of Upper Extremity Instrument (CUE) measures functional limitation and assesses the amount of difficulty experienced in performing specific actions with one or both arms and hands in people with tetraplegia.

Questions focus on someone's ability to reach or lift; pull and push with their arms; move and position their arm and wrist; use their hand and fingers; and press with the tip of the index finger.

Availability

Worksheet: Can be found here.

Languages: English and Hindi.

Assessment Interpretability

Minimal Clinically Important Difference

Not established in SCI

Statistical Error

SEM = 12.2

(Marino et al. 1998; n=154; mean age: 37 years; ASIA A-D; chronic SCI)

Typical Values

Mean CUE score: 78.8 (SD: 29, range: 4-124, median = 78)

(Kalsi-Ryan et al. 2012; n=72; mean age: 39.7 years; 39% complete tetraplegia, 61% incomplete tetraplegia; chronic SCI)

Measurement Properties

Validity – **High**

High content validity in all items:

Index of content validity of CUE-H: 0.95

(Aikat & Prasad 2023; n=15; tetraplegia; CUE-Q Hindi version)

High Spearman's ρ correlation with GRASSP subtests (All P<.0001):

Sensation total $_{(R+L)}$: ρ = 0.77
Strength total $_{(R+L)}$: ρ = 0.76
Prehension performance total $_{(R+L)}$: ρ = 0.83

(Kalsi-Ryan et al. 2012; n=72; mean age: 39.7 years; 39% complete tetraplegia, 61% incomplete tetraplegia; chronic SCI)

High Spearman's ρ correlation with GRASSP V2 subtests (All P<.0001):

GRASSP Sensibility: ρ = 0.79
GRASSP Strength: ρ = 0.76
GRASSP Prehension: ρ = 0.83

(Kalsi-Ryan et al. 2019; n=72; mean age: 39.7 years; ASIA A-D; chronic tetraplegia)

High correlation with ASIA Upper Extremity Motor Score:

r = 0.782 (p<0.05)

High correlation with Functional Independence Measure:

r = 0.738 (p<0.05)

(Marino et al. 1998; n=154; mean age: 37 years; ASIA A-D; chronic SCI)

Number of studies reporting validity data: 4

Reliability – **High**

High Internal consistency:

α = 0.96 – 0.99

(Marino et al. 2012, n=30; 30 males; mean age: 44.8 years; 10 incomplete, 20 complete injury)

(Aikat & Prasad 2023; n=15; tetraplegia; CUE-Q Hindi version)

High Test-retest reliability:

ICC = 0.99 (range: 0.95 – 0.99)

ICC average = 0.99 range (0.97-0.99)

(Aikat & Prasad 2023; n=15; tetraplegia; CUE-Q Hindi version)

Number of studies reporting reliability data: 2

Responsiveness

Floor/Ceiling Effect:	**Effect Size:**	**Number of studies reporting responsiveness data:** 0
Not established in SCI	Not established in SCI	