Physical Activity Recall Assessment for People with SCI (PARA-SCI)

Assessment Overview

Assessment Area

ICF Domain:
Participation
Subscales of PARA-SCI:
Cumulative Activity
Leisure Time Physical Activity (LTPA)
Lifestyle Activity

You Will Need

Length:
20-30 minutes, 8 categories
Scoring:
Activity scores: average # of minutes of mild, moderate, and heavy activity reported for categories across three days.
Daily cumulative physical activity: average sum of LTPA and leisure activity across three days.
Separate scores are calculated for mild, moderate, and heavy intensity levels.

Summary

The Physical Activity Recall Assessment for People with SCI (PARA-SCI) is designed to capture information on the type, frequency, duration and intensity of physical activity carried out by people with SCI using a wheelchair as their primary mode of mobility.

Individuals are asked about their activity over the previous 3 days, starting with the prior day.

Activity is broken down into 8 periods: 1) Morning routine, 2) Breakfast, 3) Morning, 4) Lunch, 5) Afternoon, 6) Dinner, 7) Evening, 8) Evening Routine.

This assessment was specifically developed for the SCI population. It provides a quantitative measure of physical activity, taking into account ADLs – which are often physically taxing for individuals with SCI.

Availability

The interview script and scoring sheet can be found here.

Languages: English and Thai.

Assessment Interpretability

Minimal Clinically Important Difference

MCD = 179.4min

(Zbogar et al. 2016, n=106; Non-ambulatory patients: (n=70), 49 males, 21 females, Mean age (SD): 48.9 (18.3) years; 49% Paraplegic, 51% Tetraplegic; Ambulatory patients: (n=36), 26 males, 9 females, Mean age (SD): 51.8 (15.4) years; 63% Paraplegic, 37% Tetraplegic)

Statistical Error

Standard Error of Measurement:
Cumulative: 64.7 min/day
LTPA: 31.7 min/day
Lifestyle activity: 65.0 min/day

Minimal Detectable Change:
Cumulative: 179.4 min/day
LTPA: 87.9 min/day
Lifestyle activity: 180.1 min/day

(Martin Ginis et al. 2005; n=102; 72% males, incomplete and complete injuries; mean (SD) time since injury: 12.5 (11.2) years for paraplegics (n=50), 11.2 (8.5) years for tetraplegics (n=52))

Typical Values

Mean Scores (min/day):
Cumulative: 184.1-189.3
LTPA: 45.3-51.2
Lifestyle activity: 138.1-138.8

(Martin Ginis et al. 2005; n=102; 72% males, incomplete and complete injuries; mean (SD) time since injury: 12.5 (11.2) years for paraplegics (n=50), 11.2 (8.5) years for tetraplegics (n=52))

Measurement Properties

Validity – Low to Moderate

Moderate correlation between Leisure Time Physical Activity Questionnaire for People with Spinal Cord Injury and PARA-SCI LTPA subscale:

r = 0.46

(Martin Ginis et al. 2012; N=103; 75% males, tetraplegia and paraplegia, 40% complete, 60% incomplete; general community: mean (SD) time since injury: 17.9 (11.9) years)

Moderate correlation with Step Counts:

r (95%CI) = 0.35 (0.01-0.61)

Low correlation with Wrist accelerometry:

r (95%CI) = -0.04 (-0.27-0.20)

Low correlation with SCIM III mobility score:

r (95%CI) = -0.14 (-0.37-0.11)

(Zbogar et al. 2016, n=106; Non-ambulatory patients: (n=70), 49 males, 21 females, Mean age (SD): 48.9 (18.3) years; 49% Paraplegia, 51% Tetraplegia; Ambulatory patients: (n=36), 26 males, 9 females, Mean age (SD): 51.8 (15.4) years; 63% Paraplegia, 37% Tetraplegia)

Construct Validity:

PARA-SCI has two dimensions: 'Mod to heavy' and 'mild intensity' leisure-time physical activity).

(Lyons and Martin Ginis 2024, N = 703 adults with SCI)

Number of studies reporting validity data: 4

Reliability – Low to High

Moderate to High Test-retest Reliability:

Cumulative: ICC = 0.79
LTPA: ICC = 0.72
Lifestyle Activity: ICC = 0.78

(Martin Ginis et al. 2005; n=102; 72% males, incomplete and complete injuries; mean (SD) time since injury: 12.5 (11.2) years for paraplegics (n=50), 11.2 (8.5) years for tetraplegics (n=52))

Moderate Test-retest Reliability:

Non-ambulatory participants: ρ (95%CI) = 0.68 (0.53-0.79)

Ambulatory participants: ρ (95%CI) = 0.53 (0.24-0.73)

(Zbogar et al. 2016, n=106; Non-ambulatory patients: (n=70), 49 males, 21 females, Mean age (SD): 48.9 (18.3) years; 49% Paraplegia, 51% Tetraplegia; Ambulatory patients: (n=36), 26 males, 9 females, Mean age (SD): 51.8 (15.4) years; 63% Paraplegia, 37% Tetraplegia)

High inter-rater reliability:

ICC = 0.99

Low intra-rater reliability:

ICC score r<0.5

(Eitivipart et al. 2022; n=38; 27 males, 11 females; mean (SD) age: 37.4 (10.4) years; 13 tetraplegia, 25 paraplegia; mean (SD) time since injury: 12.7 (9.3) years; Thai version)

Low Internal consistency:

α = 0.227

(Lyons and Martin Ginis 2024, N = 703 adults with SCI)

Number of studies reporting reliability data: 4

Responsiveness

Floor/Ceiling Effect:
Floor Effect: 63%-64% reported no heavy intensity lifestyle activities

(Martin Ginis et al. 2005; n=102; 72% males, incomplete and complete injuries; mean (SD) time since injury: 12.5 (11.2) years for paraplegics (n=50), 11.2 (8.5) years for tetraplegics (n=52))

Effect Size:
Not established in SCI

Number of studies reporting responsiveness data: 1