

The Body Function, Activity Limitation & Participation Restrictions of Clinically Weak Elderly Individuals

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Objectives

Quantify the body function (BF), activity limitation (AL), & participation restrictions (PR) of clinically weak elderly individuals (CWE)

Investigate the interrelationship of BF, AL, & PR status.

Study Design

Retrospective cross-sectional study

Setting

PMR Clinic

Participants

29 community dwelling elderly individuals (range 65-89 years old)

Labeled as **Clinically Weak** (defined as < 26 kg. men & <16 kg. women by Dynamometer strength testing)

Main Outcome Measures

- **PROMIS-57v1.0-fatigue (PROMIS-FA) & sleep disturbance (PROMIS-SD)** sub-scales assessed Body Function (BF)
- **PROMIS-57v1.0-physical function (PROMIS-PF) & 6-Minute Walk Test (6MWT)**: described Activity Limitations (AL)
- **PROMIS-57-satisfaction-with-social-role (PROMIS-SSR)** quantified Participation Restrictions (PR)

Results

Data tested for normality were found to meet distributional assumptions using Shapiro-Wilk test (all $p > .05$). ANOVA analysis using gender and strength impairment as factors and age as covariate determined if there were clinical differences in measurements for these two purported factors. Descriptive statistics and significance tests are provided for each variable, followed by Pearson Correlation analysis (significant $p \leq 0.05$).

Results Cont.

- Mean (SD) strength test scores (kg):
 - 13.29 (3.76) females, 22.09 (3.97) males
- Mean (SD) body function T-scores (female, male):
 - PROMIS-FA 49.71 (6.09), 55.87 (13.28)
 - PROMIS-SD 49.68 (8.8), 50.86 (6.14).
- Mean AL T-scores:
 - 35.18 (4/13), 31.32 (5.7).
- Mean (SD) 6MWT distance (feet) and speed (mph) scores:
 - 884.55 (256.76), 957.50 (367.23); and, 1.67 (0.48), 1.81 (0.69)
- Mean PR T-scores:
 - 48.92 (12.1), 35.47 (7.4).
- In CWE, the **strength impairment score correlated with**:
 - PROMIS-FA ($r=.736$; $p=.004$),
 - 6MWT-distance ($r=.414$, $p=.044$)
 - 6MWT-speed ($r=.415$, $p=.044$)
 - PROMIS-SSR ($r=-.588$, $p=.044$)

Conclusions

- CWE tended to have their body function within population mean, while tending to have severe AL and mild/moderate PR. The **strength impairment in CWE** had a **statistically significant correlation** with all disablement components: **body function, activity limitation, and participation restriction**. Thus, an intervention addressing strength deficits in these individuals would also address all community reintegration components.
- Findings support the importance of **assessing all three functional status components BF, AL, & PR** in these individuals.
- **Further research** should be conducted on the inter-relationship relationships of BF, AL, and PR in other geriatric syndromes, such as geriatric frailty.