

Functionality according to frailty and cognitive status: Differences between scoring procedures for the Lawton-Brody IADL scale

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Abstract

Background: Frailty is the state of physiological vulnerability that hindered age-related decline that precedes disability. However, some functional decline in IADLs is expected, particularly when co-occurring with Mild Cognitive Impairment (MCI). Our aim was to analyze differences in IADLs between prefrailty and frailty participants with or without MCI. Three scoring procedures for the Lawton & Brody Scale administered to informants were used to analyze IADL differences: 1) Raw scoring: percentage calculation of the raw scores considering all the items; 2) Gender-corrected scoring: percentage calculation of the IADLs that continue to be carried out but excluding in men the 3 elements traditionally associated with the female gender role (i.e., housekeeping, food preparation, and laundry); 3) Past-performance corrected scoring: percentage calculation of the IADL activities that the person could perform in the past but now performs with greater difficulty or no longer performs.

Method: The sample comprised 285 Spanish community-dwelling older adults, without diagnosis of dementia nor disability. MoCA test was used to objectively measure cognitive functioning. Participants were classified using the frailty phenotype: No-frailty (i.e., met no criteria), pre-frailty (i.e., met one-two criteria), and frailty (i.e., met three or more criteria). Presence of MCI were considered to further classify the participants considering cognitive status.

Results: Differences between No-frailty (N = 80), (Pre)frailty without MCI (N = 123), and (Pre)frailty with MCI (N = 62) groups were tested using non-parametric tests (see Figure 1). Group differences (Kruskal-Wallis tests) were found using Raw ($H = 11.30$, $p < 0.01$) and Past-performance corrected scores ($H = 10.57$, $p < 0.01$). For both, lower IADL scores were found in the (Pre)frailty with MCI compared with the No-frailty group (Raw scoring: $Z = -3.37$, $p < 0.01$; Past-performance corrected scoring: $Z = -1.97$, $p < 0.05$) and compared with (Pre)frailty without MCI group (Raw scoring: $Z = -2.86$, $p < 0.01$; Past-performance corrected scoring: $Z = -2.65$, $p < 0.01$).

Conclusion: Differences in IADLs were found between groups with and without MCI using raw and proportional scores considering past performance skills. Between-group differences in participants without cognitive impairment did not reach significance regardless of their frailty status. Results using the gender-corrected score suggest a lower sensitivity for detecting functional impairment in men when this procedure is used.

Figure 1

Means and standard errors for No-frailty, (Pre)frailty-noMCI and (Pre)frailty-MCI groups using the three Lawton & Brody scoring procedures

