Turkish Psychological Articles, June 2025, *28*(54), 19-33 DOI: 10.31828/tpy13019969

Summary
The reliability and validity of the Turkish Version of Lawton Instrumental Activities of Daily Living Scale

Cem Soylu[1]

Çengelci Özekes[2]

Functional status is defined as an individual's ability to perform the necessary daily activities to ensure well-being and is generally conceptualized as a combination of three functional domains: biological, psychological (i.e., cognitive and affective), and social (World Health Organization, 1998). In other words, functional status reflects an individual's capacity to carry out the physical and social activities required for self-care and daily living.

Research in the literature indicates that, in addition to serving as a basic indicator of an individual's general health status and quality of life, functionality impairments are among the most important predictors of a wide variety of variables such as survival (Huang et al., 2020; Shaw et al., 2022), the progression of symptoms (Chien et al., 2021), and as hospitalization (Melo et al., 2023). Functionality is evaluated in the literature through "Basic Activities of Daily Living" and "Instrumental Activities of Daily Living" (Chen et al., 2015; Paula et al., 2014; Sikkes et al., 2009). Basic activities of daily living typically include self-care needs, such as feeding, dressing, bathing and toileting. These activities generally rely on automatic procedural memory processes and basic motor functions, and do not require attention (Sousa et al., 2015). In contrast, instrumental activities of daily living encompass more complex activities, such as preparing meals, cleaning and taking medications, which require higher-level cognitive abilities, including memory, attention, and executive functions (Siriwardhana et al., 2018; Sousa et al., 2015).

One of the most frequently used scales in the literature for evaluating changes infunctional status over time is the "Lawton Instrumental Activities of Daily Living Scale" (Lawton IADL; Leon et al., 2016; Tong & Man, 2002). In a review study, Neo et al. (2017) examinedscales used to measure daily living activities and found that the Lawton IADL scale was among the most commonly utilized. This scale, developed by Lawton and Brody (1969), assesses skills of using the ability to use telephone, shopping, food preparation, housekeeping, laundry, mode of transporation, responsibility for own medications, and handling finances. Initially, the scale was developed as two different forms for men and women with two rating points (0 = less able, 1 = more able). However, it was later revised to eliminate gender-specific distinctions, resulting in a single, unified scale applicable to both men and women (Graf , 2008; Tong and Man, 2002).This scale consists of eight items and can be scored using different formats, including 0-1, 1-3, or 1-5 Likert type (Cromwell et al., 2003; Vittengl et al., 2006). In the present study, the version with three rating points, "1 = unable", "2 = able with help" and "3 = able without help", was used.

The Lawton IADL scale has been translated into many languages, including Greek (Tafiadis et al., 2023), Persian (Mehraban et al., 2014), Spanish (Vergara et al., 2012), Chinese (Tong & Man, 2002), Sinhali (Siriwardhana et al., 2018), Malay (Kadar et al., 2018), and Filipino (Leon et al., 2016), and is widely used in various countries. The strong validity and reliability findings reported in these studies demonstrate that the translated versions are appropriate for use in their respective languages. The primary aim of the present study is to examine the psychometric properties of the Turkish form of the Lawton IADL scale in individuals aged 50 and older who reside either in nursing home or in their own homes.

Method

Participants

The sample of the present study consists of adults aged 53 to 92 (M = 67.13, $SD.$ = 9.41) living in private nursing homes in Narlıdere and Güzelbahçe and adults who visit a municipal center for adults in Karşıyaka and Gaziemir, in Izmir.

Measures

Demographic Information Form. A "Demograp-

Address for Correspondence: [1]Cem Soylu, phd.cemsoylu@gmail.com
[2]Banu Çengelci Özekes, banu.cengelci.ozekes@ege.edu.tr

hic Information Form" was developed by the researchers to collectparticipants' information, including age, gender, education level, and marital status.

Mini-Mental State Examination test. It was developed by Folstein et al. (1975) to measure cognitive functioning and standardized by Molloy and Standish (1997). The validity and reliability study was conducted by Güngen et al. (2002), with the cut-off score determined to be 23/24.

Katz Index of Independence in Activities of Daily Living Scale. The scale was developed by Katz et al. (1963) to assess the disability status of individuals. It consists of sixquestions covering activities essential for daily living, such as transfer, dressing, and feeding. In a study examining the psychometric properties of the Turkish version, the Cronbach's alpha internal consistency coefficient was found to be 0.83 (Pehlivanoğlu et al., 2018), while in the current study, it was 0.85.

Life Satisfaction Scale. This scale, developed by Diener et al. (1985), has seven rating points (1 = Strongly disagree, 7 = Strongly agree), and consists of a single dimension with five items. In a study examining the psychometric properties of the Turkish version, the Cronbach's alpha internal consistency coefficient was found to be 0.79 (Imamoğlu, 2004), while in the current study, it was 0.89.

Psychological Well-Being Scale. The scale was developed by Ryff and Keyes (1995) to measure individual's well-being. It consists of 18 items and uses a five-point rating scale (1 = "Strongly disagree", 5 = "Strongly agree"). The psychometric properties of the Turkish version were tested by İmamoğlu (2004), with the Cronbach's alpha internal consistency coefficient reported as 0.79. In the current study, the Cronbach's alpha internal consistency coefficient was found to be 0.94.

Procedure

Translation. First, the scale items were translated into Turkish by three researchers, all faculty members from the psychology department. The items with discrepancies in translation were reviewed, and the most appropriate common expressions were selected. In the next step, the Turkish version of the scale was translated back into English by two new researchers and compared with the original items. In the final stage, a pilot study was conducted with 10 adults to test the scale. The items that were found difficult to understand were revised, and the scale was finalized.

Data Collection. Permission was obtained from the "Ethics Board and Commission of Ege University" in Turkey (04/10, 204), and then the institutions of residing in nursing homes were contacted, and the necessary institutional permissions were obtained. Individuals living at home were reached through a municipal center for adults using the convenient sampling method.

Statistical Analysis

Internal consistency (Cronbach's alpha), Guttman Split-half, and item-total score correlation coefficients were calculated to determine the reliability. To examine structural validity, an explanatory factor analysis was conducted, followed by a confirmatory factor analysis to verify the obtained factor structure. Mann–Whitney test and Spearman correlation test were used to test known groups, criterion- related, convergent, and discriminant validity. Descriptive analyses and exploratory factor analysis were performed using R (Version 3.3.2; R Core Team, 2020) and SPSS.23, while confirmatory factor analysis was conduected using Mplus 8.3.

Results

The reliability of the Lawton Instrumental Activities of Daily Living Scale

The Cronbach's alpha internal consistency coefficient of the Lawton IADL scale was found to be 0.95, and the Guttman split-half reliability coefficient was 0.94. Additionally, the correlation coefficients of the scale items with the total test score were examined, revealing that these coefficients ranged from 0.59 and 0.94.

The validity of the Lawton Instrumental Activities of Daily Living Scale Validity

Structural validity. As a result of the Principal Component Analysis, the Kaiser-Meyer-Olkin (KMO) value was .90, and Bartlett's Chi-Square value was $\chi 2 = 467.70$, $df. = 28$, $p < .001$. One factor with an eigenvalues greater than 1 was identified (eigenvalue = 5.93),explaining 74.13% of the total variance. The item loadings of the scale ranged from .70 to .91 (Table 2). Confirmatory factor analysis was performed to test the accuracy of the single-factor structure obtained from the principal component analysis. The goodness-of-fit indexes were $\chi 2$ (19, N =61) = 54.68, $p < .001$, RMSEA = .18, CFI = .92, TLI = .89.

Known-groups construct validity. As expected, the functionality scores of older adults living at home (*Mdn. = 24)* were significantly higher than those of adults living in a nursing home (*Mdn. = 15) (*$U = 92.00$, $p < .001$). Similarly, the functionality scores of older adults aged 50-64 (*Mdn. = 24)* were significantly higher than those of adults over 65 years of age (*Mdn. = 19)* ($U = 273.50$, $p = .005$).

Criterion-related validity. As expected, the functionality scores of adults with three or more chronic diseases (*Mdn.* = 12) were significantly lower than the scores

of adults with two or fewer chronic diseases (*Mdn.* = 23) ($U = 94.50$, $p < .001$).

Convergent and discriminant validity. To test the convergent validity of the scale, the correlation coefficients were examined, and a positive and strong correlation coefficient was found with the "Katz Activities of Daily Living Index" ($r = .75$, $p < .001$). To test the discriminant validity, the correlation coefficient between the "Life Satisfaction Scale" and the "Psychological Well-Being Scale" was examined, revealing positive and moderate correlation coefficients were found ($r = .42$, $p = .001$ and $r = .50$, $p < .001$, respectively).

Discussion

The reliability and validity of the Lawton IADL scale, developed to evaluate the functionality of individuals, were tested in a Turkish sample aged 50 and over in the present study. The findings showed that both the reliability and validity results of the scale were at a satisfactory level.

When examining the findings from other studies that measured the reliability of the scale in different languages, the Cronbach's alpha internal consistency coefficient was 0.94 in the Spanish version (Vergara et al., 2012), 0.91 in the Sinhali version (Siriwardhana et al., 2018), 0.89 in the Greek version (Tafiadis et al., 2023), and 0.80 in the Filipino version (Leon et al., 2016). Furthermore, Vergara et al. (2012) reported that the correlation coefficients of the scale items with the total test score ranged between 0.61 and 0.87 in the Spanish version, whileMehraban et al. (2014) found the correlation coefficients ranged from 0.43 and 0.61 in the Persian version. In our study, the Cronbach's alpha internal consistency coefficient was found 0.95, and the correlation coefficients of the scale items with the total test score ranged from 0.59 to 0.94.

In their study on the validity and reliability of the Sinhali version, Siriwardhana et al. (2018) reported that the scale has a single-factor structure, explaining 79.4% of the variance. Similarly, the Spanish version of the scale was found to have a single factor structure, accounting for 70.64% of the variance (Vergara et al., 2012). Consistent with these findings, the Turkish version of the scale also exhibited a single factor structure, explaining 74.13% of the total variance.

In our study, similar to the findings of Vergara et al. (2012) and Tong and Man (2002), adults aged of 50-64 had higher functionality scores than those over 65. Moreover, the functionality scores of older adults living at home were higher than those of adults residing in nursing homes and nursing homes. These findings support the scale's known group validity.

In summary, when the various reliability and validity results from our study were considered as a whole, it was found that the Turkish version of the scale demonstrated very high psychometric properties and closely aligned with findings from studies in other languages. These results suggest that the Lawton IADL is a reliable, valid, and easy-to-use scale for assessing the functional status of individuals living in our country.

EK

Lawton Enstrümental Günlük Yaşam Aktiviteleri Ölçeği

Aşağıdaki aktivitelerden hangilerini ne ölçüde yapabildiğinizi size en uygun seçeneği daire içine alarak belirtiniz.

AKTİVİTELER	YAPAMAZ	YARDIMLA YAPAR	YARDIMSIZ YAPAR
Telefon kullanımı	1	2	3
Alışveriş yapabilme	1	2	3
Yemek hazırlayabilme	1	2	3
Ev işlerini yapabilme	1	2	3
Çamaşır yıkayabilme	1	2	3
Toplu taşıma araçlarına binebilme	1	2	3
Kendi ilacını içebilme	1	2	3
Parasını idare edebilme	1	2	3