



RESEARCH ARTICLE

Nationwide Study of Basic and Instrumental Activities of Daily Living in Individuals Aged 65+ Living at Home

Nadire Gülçin YILDIZ^{1*}, Halide Z. AYDIN² and Kemal AYDIN³

¹Faculty of Education, Department of Guidance and Counseling, Istanbul Medipol University, Istanbul / Türkiye

²Arnold School of Public Health, University of South Carolina, Columbia, SC / United States

³Merzifon Faculty of Economics and Administrative Sciences, Amasya University, Merzifon / Türkiye

Abstract

The limitations encountered by aging individuals 65+ in Turkey in their basic and instrumental activities of daily living were examined according to gender and age i.e., specifically for 65-74 and 75+ age groups. Microdata from the Turkey Health Survey implemented by the Turkish Statistical Institute (TurkStat) in 2019 were used in the analyses. According to the findings of this country-wide research, the results indicated that of the 2457 people aged 65+ living in their own homes, 11.2% were limited in activities of daily living (ADL), and 45.8% were limited in their instrumental activities of daily living (IADL). The ADL and IADL limitations also increased significantly according to age and gender. The prevalence of ADL limitations across Turkey was 4.5%, 1.9% in men aged 65-74, and 7.2% in women aged 65-74. In elderly individuals aged 75+, the prevalence of ADL limitations was found to be 13.7% in men and 21.7% in women. Based on the results of the Instrumental Activities of Daily Living module (IADL) results, 46.9% of men between the ages of 65-74 were limited in IADL, while this rate was found to be 72% for women. In both activities, the prevalence of limitations in women was more than twice as high as in men. The prevalence of ADL and IADL limitations differed significantly by gender and age groups ($p < 0.05$).

Keywords

Activities of Daily Living, Geriatrics, Age, Gender, Mental Health, Public Health, Quality of Life

INTRODUCTION

As a result of the demographic changes, the proportion of the population made up of elderly individuals is increasing. According to the population projections of the Turkish Statistical Institute, the rate of the elderly population aged 65+ is expected to reach 11% in 2025, 12.9% in 2030, and 16.3% in 2040 (TurkStat, 2021). Although elderly individuals' aging experience may vary, diseases increase with age while physical and cognitive performances decrease continuously (Demir Akça, 2014; Diker et al., 2002; Vaughan 2016). The number of people

reporting limitations in daily living activities also increases with age.

Limitations in daily living activities restrict the elderly populations' participation in daily life and independent living experiences, making them dependent on assistance. Many countries have been experiencing unprecedentedly rapid demographic changes since the second half of the 20th century, which is characteristic of the demographic transition caused by the growth rates -i.e., being accelerated to exceptional levels in history (Bongaarts, 2009, p. 2985). The number of elderly individuals affected by this situation during the demographic transformation process will continue to increase in the future (Aydiner Boylu and

Received: 09 September 2023 ; Accepted: 16 October 2023; Online Published: 25 October 2023

¹ORCID: 0000-0002-5852-9658 , ²ORCID: 0000-0001-7017-6149, ³ORCID: 0000-0002-2013-7085

How to cite this article: Yıldız, N.G., Aydın, H.Z. and Aydın, K. (2023). Nationwide Study of Basic and Instrumental Activities of Daily Living in Individuals Aged 65+ Living at Home. *Int J Disabil Sports Health Sci*;2023;Special Issue 1:330-340. <https://doi.org/10.33438/ijdsHS.1357500>

Günay, 2017; Diker et al., 2001; Kesioğlu et al., 2003; Tel and Tel, 2006).

Healthy aging is associated with the ability to perform Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL). Therefore, improving ADL and IADL is considered to help prevent dependence in the elderly population. Determining the prevalence of ADL and IADL in the elderly population and determining their causes may guide social policymakers, healthcare, and mental health providers (WHO, 2001; WHO, 2015).

ADL encompasses essential skills necessary for self-care including bathing, feeding, dressing, toileting, and mobility. The inability to perform ADL can lead to dependence, impacting an individual's quality of life (Edemekong et al., 2023). Although many studies have been conducted in Turkey on the ADL of patients in hospitals and in various local regions, such as elderly individuals living in nursing homes and neighborhood health centers, there is no research covering the elderly population as a whole (Demir Akça et al., 2014; Demir Erbil and Hazer, 2021; Ince Parpucu et al., 2023; Kitiş et al., 2012; Molaoğlu and Yanmış, 2018; Çam and Salık Asar, 2019). However, the nationwide prevalence of elderly individuals aged 65+ living at home experiencing limitations in their ADL and IADL is not known.

The TurkStat periodically conducts a survey called the Turkey Health Survey (THS) covering the whole country. By analyzing the ADL and IADL modules in these surveys, it is possible to examine the limitations faced by elderly individuals and the factors affecting them. This study aims to analyze the data of the THS conducted by the TurkStat in 2019 and examine the limitations faced by people aged 65+ in Turkey in their ADL and IADL.

METHODS

Research Model

This is a descriptive and cross-sectional study. In this form of research, the researcher aims to examine and then discuss the results of the population at a particular point in time. Describing what already exists in the population without any control or changes allows the researcher to document issues (Heppner et al., 2008). As a tool, descriptive research design is a powerful method to

gather information about a particular group, which offers the ability to outline facts and features of a particular population of interest. This study was performed in line with the principles and guidelines of the Declaration of Helsinki. The study protocol for the THS was approved by the chairperson of the Turkish Statistical Institute. "Regulation on Procedures and Principles Regarding Confidential Data Privacy and Data Security in the Official Statistics" was used to ensure the privacy and confidentiality of the data from the study. All participants provided informed consent before enrollment in the survey. These guidelines were officially published, and a gazette was assented to on 20/06/2006-No.26204.

Data Collection

The data from the Turkey Health Survey (THS), which was implemented cross-sectionally by the Turkish Statistical Institute (TurkStat) in 2019, was analyzed in this study. THS was cross-sectional research conducted with a multi-stage sampling design in provinces, districts, and towns covering 12 regions. This survey, the last of which was conducted in 2019, covers households in all settlements within the borders of Turkey. The population described as institutional (e.g., military soldiers, dormitory residents, prisoners, those who stay in the hospitals for a long term, elderly individuals residing in nursing homes) was not included in the research. Detailed information about sample selection, method, definitions, and classifications of socio-economic variables were included in the TurkStat 2016, 2019, and 2022.

Variables and measurements

To evaluate the prevalence of limitations in daily activities in the general population, the Turkey Health Survey (THS) includes variables belonging to the five-item Katz's Basic Activities of Daily Living Index (ADL) and seven-item Lawton and Brody's Instrumental Activities of Daily Living Index (IADL) (Lawton & Brody, 1969; Katz et al. 1963; Katz et al., 1970; Katz, 1983). The survey has the following questions: "1. Do you usually have difficulty on feeding yourself without help? 2. Do you usually have difficulty on getting in and out of a bed or chair without help? 3. Do you usually have difficulty on dressing and undressing without help? 4. Do you usually have difficulty on using toilets without help? 5. Do you usually have difficulty on bathing or showering?" In the 5-item ADL module, the answers were as follows: a. No difficulty; b. Some difficulty; c. A

lot of difficulty; and d. I can't achieve it by myself. In this study, the options "No difficulty" and "Some difficulty" were combined; and ADL limitations categories were created by combining the "No ADL difficulty." As a result of the calculations, participants with ADL scores of 1-5 were defined as having "No ADL Limitations" or limitations, and those with 6+ points were defined as having difficulties or limitations with their ADL or referred to as "ADL Limitations."

In the IADL module, which had a total of seven items, participants are asked:

1. Do you usually have difficulty on preparing meals without help? 2. Do you usually have difficulty on using the telephone without help? 3. Do you usually have difficulty on shopping without help? 4. Do you usually have difficulty on managing medication without help? 5. Do you usually have difficulty on doing light housework without help? 6. Do you usually have difficulty on doing occasional heavy housework without help? 7. Do you usually have difficulty on taking care of finances and everyday administrative tasks without help? The responses included: a. No difficulty, b. Some difficulty, c. A lot of difficulty, d. I can't achieve it by myself, e. Never tried it or do not need to do it.

In the 7-item IADL module, "No difficulty," "Some difficulty," and "Never tried it or do not need to do it" responses were combined and created the "No IADL limitations" category. "A lot of difficulty" and "I can't achieve it by myself" were combined and created the "IADL limitations" category. An IADL score between 1-7 was defined as having No IADL limitations, and an IADL score of 8+ points was defined as having IADL limitations.

Having at least one item marked "A lot of difficulty" on the ADL and IADL modules defined ADL and IADL limitations. In this study, elderly individuals aged 65+ were included in the analysis, with age categories of 65-74 and 75+. In THS, the dependence levels of a total of 2458 people, including 1589 people in the 65-74 age group and 869 people aged 75+, were examined in their daily life activities.

RESULTS

In Table 1, the prevalence of ADL limitations was found to be significant between

gender and age groups ($p < 0.05$). According to the five-item ADL results, 96% of men aged 65-74 did not have any difficulty feeding themselves, while this rate was 90% for women. In addition, in this age group, 3.4% of men were partially challenged. Also, 7.8% of women stated that they experienced difficulties feeding themselves partially and 2.5% stated that they could not feed themselves. Among those age groups aged 75+, the frequency of eating independently without any help was 82% for men and 75% for women.

Although 88% of the participants in the 65-74 age group had no difficulty in getting into/out of bed without assistance or sitting down to/getting up from a chair, it was revealed that 9.3% of those had some difficulty and 3.1% reported that they needed support. While 93% of men had no difficulty, this rate dropped to 82% for women.

Furthermore, 88% of participants aged 65-74 reported having no difficulty in dressing and undressing without help, as 69% of those aged 75+ reported having no difficulty in dressing and undressing without help. Also, 8.7% of people aged 65-74 said they were partially struggling, whereas 3% stated they needed help. Among elderly individuals aged 75+, 18% stated they had some difficulty, 9% had a lot of difficulty, and 3.3% could not do it at all.

Among elderly individuals aged 65-74, 93% of men and 85% of women declared that they had no difficulty using the toilet, 93% of men and 84% of women reported that they had no difficulty bathing/showering with a similar frequency. Among individuals aged 75+, the rate of having no difficulty in using the toilet was 78% for men and 65.3% for women. The rate of taking a bath/shower without any assistance was 74% for men and 58% for women aged 75+.

In summary, 88% to 93% of people between the ages of 65-74 did not have any difficulty in ADL activities, 7% to 9% had some difficulty and 3.3% could not engage in any ADL at all. For people aged 75+, this distribution dropped to 78% in feeding, 69% in going to bed, dressing up, and using the toilet, and 65% in showering. 18-20% of people aged 75+ reported having some difficulty, and another 12-15% reported not being able to do it at all. In both age groups, the limitations of ADL were twice as common in women as in men.

Table 1. The prevalence of ADL limitations by age and gender

1. Do you usually have difficulty on feeding yourself without help?						
Age	Gender	No difficulty	Some difficulty	A lot of difficulty	I can't achieve it by myself	Total
65-74	Men	699-95,9	25-3,4	5-0,7	0-0,0	729
	Women	771-89,7	67-7,8	20-2,3	2-0,2	860
	Total	1470-92,8	92-5,6	25-1,5	2-0,2	1589
75 +	Men	303-81,7	49-13,2	14-3,8	5-1,3	371
	Women	375-75,3	88-17,7	26-5,2	9-1,8	498
	Total	678-78,5	137-15,5	40-4,5	14-1,6	869
2. Do you usually have difficulty on getting in and out of a bed or chair without help?						
65-74	Men	678-93,0	42-5,8	9-1,2	0-0,0	729
	Women	708-82,3	110-12,8	40-4,7	2-0,2	860
	Total	1386-87,7	152-9,3	49-2,9	2-0,2	1589
75 +	Men	277-74,7	62-16,7	22-5,9	10-2,7	371
	Women	310-62,2	125-25,1	46-9,2	17-3,4	498
	Total	587-68,5	187-20,9	68-7,6	27-3,1	869
3. Do you usually have difficulty on dressing and undressing without help?						
65-74	Men	677-92,9	41-5,6	10-1,4	1-0,1	729
	Women	726-84,4	98-11,4	32-3,7	4-0,5	860
	Total	1403-88,3	139-8,7	42-2,6	5-0,3	1589
75 +	Men	281-75,7	52-14,0	29-7,8	9-2,4	371
	Women	321-64,5	108-21,7	49-9,8	20-4,0	498
	Total	602-69,3	160-18,4	78-9,0	29-3,3	869
4. Do you usually have difficulty on using toilets without help?						
65-74	Men	681-93,4	38-5,2	10-1,4	0-0,0	729
	Women	735-85,5	87-10,1	34-4,0	4-0,5	860
	Total	1416-89,1	125-7,9	44-2,8	4-0,3	1589
75 +	Men	289-77,9	44-11,9	29-7,8	9-2,4	371
	Women	325-65,3	101-20,3	55-11,0	17-3,4	498
	Total	614-70,7	145-16,7	84-9,7	26-3,0	869
5. Do you usually have difficulty on bathing or showering?						
65-74	Men	674-92,5	43-5,9	10-1,4	2-0,3	729
	Women	719-83,6	101-11,7	37-4,3	3-0,3	860
	Total	1393-87,7	144-9,1	47-3,0	5-0,3	1589
75 +	Men	276-74,4	51-13,7	32-8,6	12-3,2	371
	Women	291-58,4	109-21,9	65-13,1	33-6,6	498
	Total	567-65,2	160-18,4	97-11,2	45-5,2	869

TURKSTAT, Turkey Health Survey, 2019

The prevalence of IADL limitations by age and gender

Table 2 includes the seven-item variables related to Lawton and Brody's Instrumental Activities of Daily Living. These variables consist of a total of seven questions that make inquiries about the ability to prepare meals, use the phone, shopping, manage medication, do light housework

and occasional heavy housework and take care of finances and everyday administrative tasks without help, which are necessary to live independently in society. In the analyses, it was determined that ADL limitations differed statistically according to gender and age groups ($p < 0.05$).

Table 2. The prevalence of IADL limitations

1. Do you usually have difficulty on preparing meals without help?							
Age	Gender	No difficulty	Some difficulty	A lot of difficulty	I can't achieve it by myself	Never tried it or do not need to do it	Total
65-74	Men	621-85,2	28-3,8	10-1,4	15-2,1	55-7,5	729
	Women	694-80,7	102-11,9	38-4,4	22-2,6	4-0,5	860
	Total	1315-82,8	130-8,2	48-3,0	37-2,3	59-3,7	1589
75 +	Men	216-58,2	43-11,6	22-5,9	40-10,8	50-13,5	371
	Women	273-54,8	83-16,7	51-10,2	72-14,5	19-3,8	498
	Total	489-56,3	126-14,5	73-8,4	112-12,9	69-7,9	869
2. Do you usually have difficulty on using the telephone without help?							
65-74	Men	661-90,7	40-5,5	7-1,0	8-1,1	13-1,8	729
	Women	659-76,6	85-9,9	36-4,2	26-3,0	54-6,3	860
	Total	1320-83,1	125-7,9	43-2,7	34-2,1	67-4,2	1589
75 +	Men	236-63,6	44-11,9	25-6,7	32-8,6	34-9,2	371
	Women	239-48,0	74-14,9	44-8,8	77-15,5	64-12,9	498
	Total	475-54,7	118-13,6	69-7,9	109-12,5	98-11,3	869
3. Do you usually have difficulty on shopping without help?							
65-74	Men	647-88,8	40-5,5	24-3,3	13-1,8	5-0,7	729
	Women	584-67,9	110-12,8	66-7,7	64-7,4	36-4,2	860
	Total	1231-77,5	150-9,4	90-5,7	77-4,8	41-2,6	1589
75 +	Men	215-58,0	52-14,0	32-8,6	51-13,7	21-5,7	371
	Women	169-33,9	77-15,5	71-14,3	141-28,3	40-8,0	498
	Total	384-44,2	129-14,8	103-11,9	192-22,1	61-7,0	869
4. Do you usually have difficulty on managing medication without help?							
65-74	Men	685-94,0	25-3,4	8-1,1	7-1,0	4-0,5	729
	Women	763-88,7	73-8,5	13-1,5	7-0,8	4-0,5	860
	Total	1448-91,1	98-6,2	21-1,3	14-0,9	8-0,5	1589
75 +	Men	287-77,4	47-12,7	22-5,9	10-2,7	5-1,3	371
	Women	339-68,1	90-18,1	38-7,6	28-5,6	3-0,6	498
	Total	626-72,0	137-15,8	60-6,9	38-4,4	8-0,9	869
5. Do you usually have difficulty on doing light housework without help?							
65-74	Men	556-76,3	46-6,3	11-1,5	27-3,7	89-12,2	729
	Women	567-65,9	163-19,0	80-9,3	40-4,7	10-1,2	860
	Total	1123-70,7	209-13,2	91-5,7	67-4,2	99-6,2	1589
75 +	Men	177-47,7	49-13,2	31-8,4	52-14,0	62-16,7	371
	Women	197-39,6	99-19,9	65-13,1	113-22,7	24-4,8	498
	Total	374-43,0	148-17,0	96-11,0	165-19,0	86-9,9	869
6. Do you usually have difficulty on doing occasional heavy housework without help?							
65-74	Men	391-53,6	98-13,4	44-6,0	52-7,1	144-19,8	729
	Women	255-29,7	185-21,5	248-28,8	149-17,3	23-2,7	860
	Total	646-40,7	283-17,8	292-18,4	201-12,6	167-10,5	1589
75 Age +	Men	92-24,8	49-13,2	54-14,6	93-25,1	83-22,4	371
	Women	67-13,5	64-12,9	122-24,5	211-42,4	34-6,8	498

	Total	159-18,3	113-13,0	176-20,3	304-35,0	117-13,5	869
7. Do you usually have difficulty on taking care of finances and everyday administrative tasks without help?							
65-74	Men	630-86,4	54-7,4	19-2,6	10-1,4	16-2,2	729
	Women	534-62,1	129-15,0	40-4,7	59-6,9	98-11,4	860
	Total	1164-73,3	183-11,5	59-3,7	69-4,3	114-7,2	1589
75 Age +	Men	222-59,8	63-17,0	28-7,5	38-10,2	20-5,4	371
	Women	188-37,8	72-14,5	54-10,8	104-20,9	80-16,1	498
	Total	410-47,2	135-15,5	82-9,4	142-16,3	100-11,5	869

TURKSTAT, Turkey Health Survey, 2019

Of a total of 1589 people between the ages of 65-74 in preparing meals without help 82.8% stated they had “No difficulty,” 8.2% said they had “Some difficulty,” 3.0% said they had “A lot of difficulty,” 2.3% said “I can’t achieve it by myself,” and another 3.7% said they had “Never tried it or do not need to do it.” For people aged 75+, this distribution in sequence was 56.3%, 14.5%, 8.4%, 12.9% and 7.9%, respectively.

With regards to using the phone, 83.1% of those between the ages 65-74 said they had “No difficulty,” 7.9% said they had “Some difficulty,” 2.9% said they had “A lot of difficulty,” 2.1% said “I can’t achieve it by myself”, and 4.2% said “Never tried it or do not need to do it.” those using the phone without assistance dropped to 54.7% of for elderly who were aged 75+. 13.6% of the participants in this age range stated that they had “Some difficulty,” 7.9% stated that they had “A lot of difficulty,” 12.5% stated that “I can’t achieve it by myself,” and another 11.3% stated that they had “Never tried it or do not need to do it.” 91.1% of those aged 65-74 and 72% of those aged 75+ had stated that they had “No difficulty” in managing their medication. While 70.7% of people aged 65-74 reported that they had “No difficulty” doing light housework.

As 43% of people aged 75+ reported that they had “No difficulty” doing light housework without help.”

40.7% of those aged 65-74 reported that they had “No difficulty” doing heavy housework without help.”

18.3% of those aged 75+ reported that they had “No difficulty” doing heavy housework without help.

13.5% of those aged 75+ reported that they “Never tried it or do not need to do it.”

In summary, women reported having more than twice as much difficulty as men on the seven-item IADL variables. The most difficult activity reported was heavy housework.

Basic and Instrumental Activities of Daily Living among elderly individuals

As explained in the variables and measurement section, the ADL and IADL index were calculated, and the results were presented in Table 3. Findings indicated that ADL and IADL limitations experienced by elderly individuals increased according to age and gender ($p < 0.05$). The average prevalence of ADL limitations was 4.5%, including 1.90% of men and 7.20% of women aged 65-74. It was found that 13.7% of men in the age group of 75+ had ADL limitations, and 21.7% of women had ADL limitations. In other words, the results indicated that 11.2% of the elderly individuals aged 65+ ($(4.5 + 17.7) / 2 = 11.2$) were limited in ADL. According to the results of the IADL module, 16.5% of men and 47.5% of women between the ages of 65-74 were limited in IADL, a total of 32.0%. While 49.6% of men aged 75+ were dependent on IADL, this rate reached 72.0% in women, and total of 59.4%. In summary, the results showed that a total of 45.8% of elderly individuals who were 65+ needed assistance with their IADL.

Table 3. ADL and IADL limitations for elderly individuals in Turkey

Age	Gender	No ADL	ADL	Total	No IADL	IADL	Total
		Limitations	Limitations		Limitations	Limitations	
		N-%	N-%	N	N-%	N-%	N
65-74	Men	715-98,1	14-1,90	729	609-83,5	120-16,5	729
	Women	798-92,8	62-7,20	860	451-52,5	409-47,5	860
	Total	1513-95,5	76-4,50	1589	1060-67,8	529-32,0	1589
75 and	Men	320-86,3	51-13,7	371	197-53,1	174-46,9	371
	Women	389-78,3	108-21,7	497	140-28,0	358-72,0	498
	Total	709- 82,3	159-17,7	868	336-40,5	532-59,4	869
65-75 plus	Total	2223- 88,8	234-11,2	2457	1396-54,2	1061-45,8	2457

TURKSTAT, Turkey Health Survey, 2019

DISCUSSION

In summary, of a total of 2457 people aged 65+ representing the entire country who were currently residing in their own homes, it was found that 11.2% were limited in ADL and 45.8% were limited in IADL. In this study, when the limitations in ADL were evaluated in terms of gender according to preparing meals, getting in/out of bed, dressing/undressing, toilet, and bathing, approximately 5% of men between the ages of 65-74 said they had some difficulty, 1.9% said they had a lot of difficulties or could not do it at all. Women, on the other hand, stated that they had some difficulty with a prevalence of approximately 10%, and another 7.2% stated that they had a lot of difficulty or could not do it at all. Likewise, about 14% of men aged 75+ stated that they had “Some difficulty” with ADL, and 13.7% had “A lot of difficulty” or “I can’t achieve it by myself.” In women aged 75+, results showed that 21% of women had “Some difficulty,” and 21.7% needed help. The results demonstrated that elderly individuals aged 65+ experienced the most limitations on bathing or showering and using toilets without help.

Results showed that IADL limitations increased when preparing meals, using the phone, managing medication, doing light and heavy housework, and taking care of financial issues. Approximately 7% of men between the ages of 65-74 reported experiencing some limitations, and 46.9% were completely limited. Results showed that nearly 7% of men aged 75+ were somewhat limited (Table 1 – Table 2) and 47% were limited in their IADL, while 15% of women were slightly limited and 72% were limited. The main problem

with the most limitations in IADL was doing heavy housework. While only 30% of elderly individuals 65+ reported that they could do heavy housework themselves, 15% reported that they had “Some difficulty” and 55% reported that they had “A lot of difficulty” or “could not do it at all.” This study provides information about ADL and IADL limitations of elderly individuals in Turkey. IADL limitations were 32% of the 65-74 age group and 59% of individuals aged 75+. ADL and IADL limitations were high among those aged 65+, and almost half of them appeared limited in their IADL. Also, both ADL and IADL limitations among women were more than twice as high compared to men. Such limitations result in adverse conditions among elderly individuals, affecting their quality of life.

The proportion of those who experience limitations in daily functioning increases with age which directly affects the quality of life. It is important to reduce these limitations that elderly individuals encounter in their daily lives. Subsequently, when these activities are impaired, assistance is required. While many studies have been conducted at the local level on basic and instrumental daily living activities, studies representing the elderly population of Turkey on a national level are none. In this respect, this study fills an important gap and aims to provide vital information to policymakers, caregivers, healthcare providers, and mental health services. However, this study is limited to the elderly living at home and does not include those persons living in nursing homes and hospital settings.

Across the world average life expectancy is increasing which is bringing the issue of improving the quality of life for aging populations.

Two main points emerged in the literature to ensure the welfare of the elderly: maintaining daily functioning and independence. Physical limitations and functional problems affect the quality of life causing long-term care. As a result of aging these emerging deficiencies can be assessed by looking at the individual's level of ability to perform daily living activities independently or with assistance.

This study helped describe how ADL and IADL impact elderly individuals' functioning. Gender and age-related causes of limitations in activities of daily living are summarized. Having the ability to live independently in engaging daily routines impacts the elderly to have a positive perception of themselves and their health (Demir Erbil and Hazer, 2021; Kitiş et al., 2012; Wolff et al., 2016). Therefore, they must be supported in this aspect as much as possible. As a result, in this study, it was found that elderly individuals experienced inadequacy in ADL. Women expressed needing twice as much help in IADLs. Additionally, it has been determined that as age and the number of chronic diseases increase, elderly individuals become more dependent on ADL (Güdük, 2023; Saul & Kosinsky, 2021).

Like previous studies, it is shown that as the age of elderly individuals increases, IADL and quality of life decrease (Tel et al., 2011; Güdük, 2023). Individuals with a decline in their physical health and limited self-sufficiency face challenges in their ADLs. In addition, ADL moderated the correlation between life satisfaction and quality (Aydiner Boylu and Günay, 2017). It is recommended to provide elderly persons to help facilitate IADL by making necessary arrangements that foster their independence. Also providing support in daily functioning to help maintain their quality of life is suggested. The social networks (i.e., family and friends) and support in IADL of elderly individuals significantly affect mental health and the aging process (Bozo et al., 2009; Demir Erbil and Hazer, 2021; Lyu & Wolinsky, 2017). This issue of limitations faced by the elderly has other important mental health consequences. For example, Bozo et al. (2009) examined the effects of ADL and perceived social support on the depression level of Turkish adults 60+. The ADL and perceived social support significantly predicted depression and higher ADL functioning and higher perceived social support predicted a lower level of depression.

In line with these results, community-based health service provision for elderly individuals is recommended (Tel et al., 2006). Assessing their ADL in their natural environment, supporting their independence (i.e., by providing the necessary care), and making arrangements that facilitate ADL will maintain engagement in ADL and enhance life quality (Diker et al., 2001; Özbek Yazıcı & Kalaycı, 2015). Aging is inevitable. However, it is possible to lower the dependency level of elderly individuals to maintain their quality of life. Today, policies and programs regarding aging focus on improving the quality of life and general health that aim for productive, successful, and independent aging (Tel et al., 2011).

A person's functional status is determined by the degree of his or her engagement in ADL. The inability to perform ADLs results in dependence on others which may lead to unsafe conditions and poorer quality of life. Assessment of a person's ADL may predict their need for paid home care and or other assisted living conditions, admission to nursing homes, alternative living arrangements, hospitalization, and use of paid home care. The outcome of a treatment program can also be assessed by reviewing patients' ADLs (Costenoble et al., 2021; Cagle et al., 2020). For example, The United States National Health Interview Survey of 2011 indicates that 20.7% of adults aged 85 or older required assistance with ADLs (Adams et al., 2011). There are extensive mental health consequences (e.g., suicide, addiction, depression) of the elderly population as the world is aging, which demand further attention (Albanese, 2020; Bozo et al., 2009; Kondo, 2008; Tel et al., 2011). Güdük (2023) conducted a national study with the Turkish population that compared the limitations of elderly individuals. The results indicated that age and sociodemographic and health characteristics influenced disability (e.g., there was a meaningful relationship between depression and disability).

Before, the nationwide prevalence of elderly individuals aged 65+ living at home experiencing limitations was not known. The results of this study helped determine the prevalence of elderly individuals aged 65+ living at home and experiencing limitations in their ADL and IADL in Turkey. Actions must be taken to facilitate ADL so that elderly individuals can live independently (Wolff et al., 2016). Thus, an elderly person's

quality of life can be enhanced (Diker et al., 2001; Kitiş et al., 2012). For this purpose, necessary provisions should be developed in areas focusing on assisted living and nursing homes (Özbek Yazıcı & Kalaycı, 2015). Further, policies related to elderly individuals' welfare, healthcare status, and mental health conditions should be in place (Bozo et al., 2009). Since it helps evaluate one's general health condition, related plan, and treatment procedure, and healthcare, assessment of ADL is clinically important topic (Costenoble et al., 2021). Similarly, it is important to acknowledge the role of diminishing one's ADL on the individual is highly encouraged and advocated in American society, and many elderly individuals fear losing their independence (Vaughan et al., 2016; Warmoth et al., 2018).

Conclusion

Results may provide dependable information on the health status of the elderly population in Turkey. In addition to being a study that reflects the country in general, the research is also important in that it sheds light on national needs and enables international comparisons, especially with countries in the European Union.

Ethical approval

The Turkish Statistical Institute provides anonymized data after signing an agreement regarding the security and accessibility of the data. Ethical approval is not required for this study because the data are publicly available, which also does not involve direct human contact.

Conflict of interest

There is no personal or financial conflict of interest within the scope of the study.

Author contribution

Conceptualization of the study conducted by NGY. The method was designed by NGY, HZA, and KA. KA performed statistical analyses.

REFERENCES

- Adams, P. F., Kirzinger, W. K., & Martinez, M. E. (2012). Summary health statistics for the U.S. Population: National Health Interview Survey, 2011. *Vital and health statistics. Series 10, Data from the National Health Survey*, (255), 1–110. PMID: 25116371
- Albanese, A. M., Bartz-Overman, C., Parikh Md, T., & Thielke, S. M. (2020). Associations Between activities of daily living independence and mental health status among medicare managed care patients. *Journal of the American Geriatrics Society*, 68(6), 1301–1306. <https://doi.org/10.1111/jgs.16423>
- Aydiner Boylu, A., & Günay, G. (2017). Life satisfaction and quality of life among the elderly: Moderating effect of activities of daily living. *Turkish Journal of Geriatrics*, 20(1), 61-60.
- Bongaarts J. (2009). Human population growth and the demographic transition. *Philosophical Transactions of the Royal Society of London. Series B, Biological sciences*, 364(1532), 2985–2990. <https://doi.org/10.1098/rstb.2009.0137>
- Bozo, Ö., Toksabay, N. E. & Kürüm, O. (2009). Activities of daily living, depression, and social support among elderly Turkish people. *The Journal of Psychology*, 143:2, 193-206, DOI: 10.3200/JRLP.143.2.193-206.
- Cagle, J. G., Lee, J., Ornstein, K. A., & Guralnik, J. M. (2020). Hospice utilization in the United States: A prospective cohort study comparing cancer and noncancer deaths. *Journal of the American Geriatrics Society*, 68(4), 783–793. <https://doi.org/10.1111/jgs.16294>
- Çam, R. & Salık Asar, A. (2019). The effect of total hip replacement discharge education on daily living activities and quality of life. *E-Journal of Dokuz Eylul University Nursing Faculty*, 12(4), 220-233.
- Costenoble, A., Knoop, V., Vermeiren, S., Vella, R. A., Debain, A., Rossi, G., Bautmans, I., Verté, D., Gorus, E., & De Vriendt, P. (2021). A Comprehensive Overview of Activities of Daily Living in Existing Frailty Instruments: A Systematic Literature Search. *The Gerontologist*, 61(3), e12–e22. <https://doi.org/10.1093/geront/gnz147>
- Demir Akça, A. S., Saraçlı, Ö., Emre, U., Atasoy, N., Güdül, S., Barut, B. Ö., & Atasoy, H. T. (2014). Relationship of cognitive functions with daily living activities, depression, anxiety and clinical variables in hospitalized elderly patients. *Archives of Neuropsychiatry*, 51(3), 267-274. Doi: 10.4274/npa.y7053
- Demir Erbil, D., & Hazer, O. (2021). The effect of the elderly's daily life activities and social networks on successful aging. *Electronic Journal of Social Sciences*, 20(80), 1846-

1857. <https://doi.org/10.17755/esosder.867218>
- Diker, J., Etiler, N., Yıldız, M., & Şeref, B. (2001). Association between cognitive status and activities of daily living, life quality and some demographic variables in older than 65. *Alpha Psychiatry*, 2(2), 79-86.
- Edemekong, P.F., Bomgaars, D.L., Sukumaran, S., and Schoo, C. (2023). *Activities of Daily Living*. StatPearls Publishing. Available at: <https://www.ncbi.nlm.nih.gov/books/NBK470404/>
- Güdük, Ö. (2023). Determining the prevalence of functional limitation and the factors affecting it among older adults in need of long-term care in Turkey. *International Journal of Healthcare Management*, 16(4), 504-512, DOI: 10.1080/20479700.2022.2118184
- Heppner, P., Wampold, B. & Kivlighan, D. (2008). *Research Design in Counseling Psychology*, 3rd edition; Brooks/Cole.
- Ince Parpuç, T., Keskin, T., Başkurt, F., & Başkurt, Z. (2023). The effect of sleep quality and sleepiness on fatigue activities of daily living and physical activity in the elderly. *Journal of Turkish Sleep Medicine*, 10(2), 104-109. DOI: 10.4274/jtstm.galenos.2022.92408
- Katz, S. (1983). Assessing self-maintenance: activities of daily living, mobility, and instrumental activities of daily living. *J Am Geriatr Soc*, 31(12), 721-7.
- Katz, S., Downs, T. D., Cash, H. R., & Grotz, R.C. (1970). Progress in the development of the index of ADL. *The Gerontologist*, 10(1), 20-30. https://doi.org/10.1093/geront/10.1_part_1.20
- Katz, S., Ford, A. B., Moskowitz, R. W., Jackson, B.A., Jaffe, M.W. (1963). Studies of illness in the aged. The Index of ADL: A standardized measure of biological and psychosocial function. *JAMA*, 185, 914-919.
- Kesioğlu, P., Bilgiç, N., Pıçakçıefe, M., & Uçku, R. (2003). The prevalence of the chronic disease and disability in elderly population at Çamdibi-1 Health Center's region in İzmir. *Turkish Journal of Geriatrics*, 6(1), 27-30.
- Kitiş, A., Ülgen, S. Y., Zencir, M., & Büker, N. (2012). Examining the relationship between cognitive level, depression status, functional level and quality of life in elderly people living at home. *Physical Therapy and Rehabilitation*, 23(3), 137-143.
- Kondo, N., Kazama, M., Suzuki, K., & Yamagata, Z. (2008). Impact of mental health on daily living activities of Japanese elderly. *Preventive Medicine*, 46(5), 457-462. <https://doi.org/10.1016/j.ypmed.2007.12.007>.
- Lawton, M. P., & Brody, E. M. (1969). Assessment of older people: Self-maintaining and instrumental activities of daily living. *The Gerontologist*, 9(3), 179-186. doi:10.1111/j.15325415.1983.tb03391.x.
- Lyu, W., & Wolinsky, F.D. (2017). The onset of ADL difficulties and changes in health-related quality of life. *Health Qual Life Outcomes* 15, 217. <https://doi.org/10.1186/s12955-017-0792-8>
- Mollaoğlu, M., & Yanmış, S. (2018). Disability and daily living activities of individuals with chronic diseases. *SETSCI Conference Indexing System*, 3, 1236-1238.
- Özbek Yazıcı, S. & Kalaycı, I. (2015). Evaluation of activities of daily living in elderly patients. *Journal of Engineering Sciences and Design*, 3 (3), 385-390.
- Saul, D., & Kosinsky, R.L. (2021). Epigenetics of aging and aging-associated diseases. *Int J Mol Sci.*, 22(1):401, doi:10.3390/ijms22010401.
- Tel, H., Güler, N. and Tel, H. (2011) Continue their activities of daily living condition and quality of life of the elderly at home. *Journal of Nursing Research Development*, 2, 59-67.
- Tel, H., Tel, H., and Sabancıoğulları, S. (2006). Status of maintenance of activities of daily living and experience of loneliness in elder than 60+ living at home and in institutions. *Turkish Journal of Geriatrics*, 9(1), 34-40.
- The Turkish Statistical Institute (TurkStat) (2015) <http://www.tuik.gov.tr/PreHaberBultenleri.do?id=18620>. Retrieved online on September 1, 2023.
- The Turkish Statistical Institute (TurkStat, 2016) Turkey Health Survey. <https://data.tuik.gov.tr/Bulten/Index?p=Turkey-Health-Survey-2016-24573>. Retrieved online on September 1, 2023.
- The Turkish Statistical Institute (TurkStat, 2019) <https://data.tuik.gov.tr/Bulten/Index?p=Turkiye-Saglik-Arastirmasi-2019-33661>. Retrieved online on September 1, 2023.

- The Turkish Statistical Institute (TurkStat, 2021). Address Based Population Registration System, 2008-2021.
- The Turkish Statistical Institute (TurkStat, 2022). https://www.tuik.gov.tr/Kurumsal/Mikro_Veri. Retrieved online on September 1, 2023.
- Ulusel, B., Soyer, A., & Uçku, R. (2004). Dependence in daily living activities among community dwelling elderly: prevalence and risk factors. *Turkish Journal of Geriatrics*, 7 (4), 199-205.
- Vaughan, L., Leng, X., La Monte, M. J., Tindle, H. A., Cochrane, B. B., & Shumaker, S. A. (2016). Functional independence in late-life: maintaining physical functioning in older adulthood predicts daily life function after age 80. *The Journals of Gerontology. A Biol Sci Med Sci.*, 71, Suppl 1, 79–86. <https://doi.org/10.1093/gerona/glv061>
- Warmoth, K., Tarrant, M., Abraham, C., & Lang, I. A. (2018). Relationship between perceptions of aging and frailty in English older adults. *Psychology, Health & Medicine*, 23(4), 465–474. <https://doi.org/10.1080/13548506.2017.1349325>
- Wolff, J. L., Feder, J., & Schulz, R. (2016). Supporting Family Caregivers of Older Americans. *The New England journal of medicine*, 375(26), 2513–2515. <https://doi.org/10.1056/NEJMp1612351>
- World Health Organization (WHO, 2001). International Classification of Functioning, Disability and Health (ICF). Deutsche Fassung herausgegeben vom Deutschen Institut für Medizinische Dokumentations und Information (DIMDI). WHO.
- World Health Organization (WHO, 2015). World report on aging and health. Retrieved online on September 20, 2022. <https://apps.who.int/iris/handle/10665/186463>



This work is distributed under <https://creativecommons.org/licenses/by-sa/4.0/>