

The effects of activities of daily living education on the independence and life satisfaction of elders

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Abstract

Purpose: The aim of this study is to examine the effect of education on the independence levels and life satisfaction (LS) of the elderly in their activities of daily living (ADL).

Findings: The level of independence in maintaining the ADLs of the elderly in the intervention group that received training increased compared to the elderly group that was not trained. LS increased in the intervention group that received training. The number of education is an effective factor in LS. As the number of education increased, the level of LS increased in the intervention group.

Conclusion: There is a linear relationship between independence in maintaining ADLs and LS in the elderly, and as the level of independence increases in the elderly, their LS also increases. In the study, there is a significant relationship between ADL and LS before and after education, and education high affected activity levels and LS.

KEYWORDS

activities of daily living, aging, life satisfaction, nursing, planned education

1 | INTRODUCTION

The World Health Organization (WHO) sets certain limits for the beginning of elderliness. Given the chronological definition of the elderliness period, the WHO defined this period as “the age of 65 and higher” (World Health Organization, 2020). According to the current updated definition of elderliness by the WHO, elders are grouped as follows: 65–74-year-old: young elder; 75–84-year-old: advanced elder; 85-year-old and older: very advanced elder (World Health Organization, 2020). Elderliness is the entire set of changes that increase the risk of death and occur with advancing chronological age. Elderliness is not related only to chronological age but should also be considered in terms of its social, psychological, and cultural dimensions (Çataloğlu, 2018).

Advancing age is an important risk factor for functional insufficiencies. Considering the concerns that the morbidity and mortality related to chronic diseases would increase along with the increase in the elderly population, it has become a necessity in Turkey to rapidly develop health policies for the elderly population and to put those policies into practice (Mollaoglu & Hastaoglu, 2017).

Elderliness, which is a period in which functional insufficiencies increase the need for care, also affects an individual's ability to carry out their activities of daily living (ADL) (Pinar & Demirel, 2016). ADLs are those necessary for the individual to maintain his/her life; changes in ADLs in elderliness affect the individual's level of independence. The life satisfaction of elderly individuals can be defined as aging well in harmony with social life and maintaining physical health (Ng et al., 2017). In other words, life satisfaction

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indicates the balance between the elder's expectations from life and his/her experiences (Kaçan Softa et al., 2016).

As the dependence of elders increases, their quality of life and life satisfaction decrease (Chokkanathan & Mohanty, 2017; Wang et al., 2017). The losses experienced affect the elders, most of whom are receiving care in an institution that trivializes them (Erci et al., 2017). However, nursing homes are social service institutions established to protect and care for elders and meet their social and psychological needs (Pinar & Demirel, 2016). Determining the factors influencing the life satisfaction of elders living in a nursing house is one of the most important responsibilities of an institution's nurse (Kapıkıran, 2016).

In light of all this information, the main purpose of care for the increasing elderly population in the world is to support their independence and increase their satisfaction with life. In this direction, it is important that the health workers of institutions serving in nursing homes meet the educational needs of the elderly to continue their ADL. The life satisfaction of the elderly, whose independence in ADL increases, is also affected. Although there are quantitative studies evaluating the ADLs of the elderly in the literature, no study has been found that examines the effect of training on ADLs on their independence. At the same time, this study reveals the training needs of the patients in the institution about ADLs, and organizes and presents the training planned to meet this need. In addition, no study has been found in the literature that deals with the independence and life satisfaction of the elderly in ADL together. Based on this requirement, this study was conducted to examine the effect of planned education about ADL on the independence levels and life satisfaction of the elderly in their ADL.

2 | MATERIALS AND METHODS

2.1 | Design

This unblinded prospective trial was conducted between September 2017 and January 2018 at nursing homes and care centers in the province of Sivas. In the care centers where the research was conducted, no education services are provided for the elderly.

The study sample consisted of 80 individuals meeting the inclusion criteria (aged 65 years and older, having no communication difficulty or mental or auditory problem, having a Barthell index < 100, and Mini-Mental Test > 17). We randomly selected 40 elders to constitute the intervention group, and 40 randomly selected elders constituted the control group. All elderly people eligible for inclusion in the study constituted the sample without using the sample calculation method. The universe over the age of 65 staying in nursing homes and care centers is 189, and the sample that complies with the conditions of participating in the research is 80. The universe and sample diagram of the research are given in Figure 1.

After the scales were applied to the elderly, training was started. The scale application phase is not preliminary training. Before starting the research, we informed the elderly people who received the

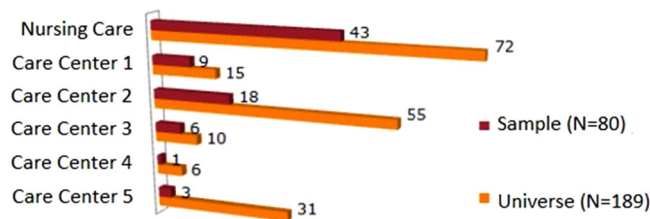


FIGURE 1 Universe and sample diagram of the research.

education that education planning was made with the random selection method. Elderly people were assigned to the intervention and control groups. The groups were set up on different days for the intervention group (those who were given planned education) and the control group (who were not given planned education). An informed consent form was given to the elders participating in the study. The elders in the intervention group were interviewed four times in 1-month they were given planned training about ADL. Scale parameters of elders were recorded and scales were administered at each visit. In the first education session, the researcher explained all the training topics to them. In the control group, no training was given and they were interviewed twice. A second education session was held 2 months after the first education session with the control group. In the control group interviews, scales were applied. The control group was measured at 2-month intervals to obtain two measurements of the intervention and control groups at the same time.

Within the intervention group, the scales were applied four times. In the control group, the scales were measured two times, coinciding with the first and fourth interview times of the intervention group. Therefore, the first and fourth measurements were evaluated when comparing the intervention and control groups.

2.2 | Study participants

The minimum sample size required to conduct the study was calculated as 80 (40 in the intervention group and 40 in the control group) using $\alpha = 0.05$, $\beta = 0.20$, $(1 - \beta) = 0.80$. The study sample consisted of 80 individuals meeting the inclusion criteria (aged 65 years and older, having no communication difficulty or mental or auditory problem, having a Barthell index < 100, and Mini-Mental Test > 17). We randomly selected 40 elders to constitute the intervention group, and 40 randomly selected elders constituted the control group.

2.3 | Data collection

The data were gathered from face-to-face meetings between the researcher and the patients in the nursing homes. The data were collected using the following four forms.

Elder Information Form: This form was prepared in accordance with a previous method described in the literature (Luo et al., 2017; Pinar & Demirel, 2016), and was used to obtain the characteristics of the elders, such as their disease status, habits, institution info, and use of medication. The form consisted of 16 items.

Barthell ADL Index: This index was developed in 1965 by Barthel and Mahoney. Among other similar indexes, the ADLs is the most widely preferred index for assessing the independence level of individuals in ADL. In the present study, ADLs were used to determine the elders' level of independence in ADL.

Life Satisfaction Scale (LSS): The LSS was developed in 1961 by Neugarten and Havinghurst to understand the perspectives of elders towards various aspects of life and how they perceive themselves and their environments (Neugarten et al., 1961).

Standardized Mini-Mental Test: The original Mini-Mental Test was published first by Folstein et al. (1975), and the standardized version prepared by Molloy and Standis (1997), as well as the application instruction, were translated into the Turkish language by three psychiatrists. The most important advantages of this test are the ease and fastness of the application.

Elder Education Handbook: This was prepared using the relevant literature (Erci et al., 2017; Kankaya & Karadakovan, 2017). The education provided to elders consisted of information about the elderliness period, nutrition, personal care, excretion, clothing, and mobility, as well as the points to consider while performing the ADL. The planned education was performed three times (with a 1-month interval) using face-to-face interviews.

2.4 | The content and implementation of the education program

The training booklet was prepared by the researcher based on the relevant literature and the opinions of four experts. After the first training, the training booklet was given to the elders in the intervention group. Considering the ethical principles, at the end of the study, the elders in the control group were trained and given the training booklet. The training was given by the researcher in the first hour in the nursing homes at a time determined together with the elders. During the first training, which lasted 20–25 min, the elders were informed about the content of the training. During the next training sessions, each of which lasted 10–15 min, the elders were given reminders, in line with their needs. Educational topics were explained verbally by showing important parts in the training booklet, and receiving their feedback and answers.

2.5 | Outcomes and definitions

The primary outcomes were independence of ADL. Secondary outcomes were life satisfaction. These variables were obtained by using the related scales based on the expressions of the patients.

2.6 | Ethical considerations

The study was conducted in accordance with the Declaration of Helsinki. Before the study, necessary permissions were obtained from the Ethics Committee of Non-Interventional Clinical Investigations Ethics Committee (decision date: March 10, 2017; number: 2017-03/25) and the Private Sivas Nursing Homes.

2.7 | Statistical analysis

The data obtained in the study were analyzed using SPSS (22.0). When the parametric test assumptions were fulfilled, the test for the significance of the difference between the two means was used to compare the independent groups. The test for the significance of the difference between the pairs and the variance analysis was used to compare the individuals in the same groups at different times. When the parametric test assumptions were not fulfilled, the χ^2 test was used. The χ^2 significance test was used to show the similarities between the individuals in both groups in terms of the data on their sociodemographic and disease characteristics. The data in the tables are given as the mean, standard deviation, and number and percentage of individuals. The margin of error was 0.05.

3 | RESULTS

The distribution of elders in the intervention and control groups by specific sociodemographic characteristics is presented in Table 1. We examined the elders' gender, social security status, marital status, educational status, chronic disease, duration in the nursing home, type of room, and use of medication and/or auxiliary instruments and found that the difference between the groups was statistically insignificant.

As shown in Table 2, the mean ADLs score of the intervention group was 83.00 ± 11.53 before the education but increased to 88.00 ± 11.48 after the education, and the difference was found to be statistically significant ($p = 0.001$, $p < 0.05$). Thus, the independence level of the elders significantly increased after education. In the control group, however, there was no significant difference between the interviews ($p = 0.882$, $p > 0.05$). Similarly, the independence levels of the educated and noneducated elders were significantly different. No difference was found between the successively measured ADLs scores of the noneducated group, and the independence levels of individuals were not affected. The mean LSS score of elders before planned education was 9.02 ± 3.70 points and increased to 10.40 ± 3.93 points after education. This finding showed that the LSS score significantly increased after education ($p = 0.001$, $p < 0.05$). In the control group given no planned education, the LSS score was found to be 8.27 ± 3.38 after the first interview but decreased to 7.07 ± 3.11 in the final interview. The difference was not statistically significant ($p = 0.006$, $p < 0.05$). Given these results, we can conclude that planned education significantly increased the

TABLE 1 Distribution of elders in intervention and control groups by specific sociodemographic characteristics

Sociodemographic characteristic	Intervention		Control		χ^2 Test
	Number	%	Number	%	
Sex					
Female	17	42.50	25	62.50	$\chi^2 = 3.20$
Male	23	57.50	15	37.50	$p = 0.073$
Social security					
Yes	28	70.00	21	52.50	$\chi^2 = 2.58$
No	12	30.00	19	47.50	$p = 0.108$
Marital status					
Never married	7	17.50	11	27.50	
Widow	33	82.50	27	67.50	$\chi^2 = 4.71$
Divorced	0	0.00	2	5.00	$p = 0.194$
Educational status					
Illiterate	22	55.00	20	45.00	
Literate	9	22.50	9	22.50	
Elementary school	7	17.50	8	20.00	$\chi^2 = 7.21$
High school/vocational school	2	5.00	3	7.50	$p = 0.062$
Chronic disease					
Yes	28	70.00	31	77.50	$\chi^2 = 0.58$
No	12	30.00	9	22.50	$p = 0.446$
Duration in nursing home					
<1 year	9	22.50	8	20.00	
1–2 years	6	15.00	11	27.50	
3–5 years	11	27.50	10	25.00	$\chi^2 = 2.09$
6–9 years	12	30.00	10	25.00	$p = 0.719$
>10 years	2	100.00	1	100.00	
Regulation medication use					
Yes	28	70.00	29	72.50	$\chi^2 = 0.06$
No	12	30.00	11	27.50	$p = 0.805$
Use of auxiliary instrument/prosthesis					
Yes	26	65.00	29	72.50	$\chi^2 = 0.52$
No	14	35.00	11	27.50	$p = 0.469$
Type of room					
Single-bed	4	10.00	4	10.00	$\chi^2 = 1.62$ $p = 0.809$

life satisfaction levels of elders. Regarding Cohen's *d*, the effect size of education was high on Barthell scores (Cohen's $d > 0.2$).

As shown in Table 3, the independence level of elders in the intervention groups increased after every education, whereas no regular increase in independence level was observed in the control group. Moreover, a successive assessment of elders in the control group revealed that the independence level in the control group decreased after the second and last interviews and slightly

increased after the third interview; however, the difference was not statistically significant ($p > 0.05$). The short-term increases in the independence levels of elders suggest the elders' pain on that day as well as environmental factors or moods. The significant effects of planned education were clearly observed in the intervention group. This finding suggests that the planned education sessions yielded the desired results for the independence levels of elders.

Group	$\bar{x} \pm SD$	Min.	Max.	Median	Wilcoxon test	Cohen's <i>d</i>
ADLs						
Intervention						
Before education	83.00 ± 11.53	40.00	95.00	85.00	$p = 0.001^*$	0.43
After education	88.00 ± 11.48	60.00	100.00	90.00		
Control						
Before education	80.25 ± 13.77	40.00	95.00	72.50	$p = 0.882$	0.09
After education	78.87 ± 14.75	45.00	100.00	70.00		
LSS						
Intervention						
Before education	9.02 ± 3.70	2.00	17.00	8.50	$p = 0.001^*$	0.36
After education	10.40 ± 3.93	3.00	18.00	10.00		
Control						
Before education	8.27 ± 3.38	1.00	16.00	6.00	$p = 0.06$	0.36
After education	7.07 ± 3.11	3.00	17.00	6.50		

Abbreviations: ADL, activities of daily living; LSS, Life Satisfaction Scale.

* $p < 0.05$.

Group	N	$\bar{x} \pm SD$	Min.	Max.	Median	Friedman's test
Intervention						
Before education	40	83.00 ± 11.53	40.00	95.00	85.00	
1st Education	40	85.00 ± 12.86	50.00	100.00	90.00	$\chi^2 = 43.69$
2nd Education	40	86.75 ± 11.95	55.00	100.00	90.00	$p = 0.001^*$
3rd Education	40	88.00 ± 11.48	60.00	100.00	90.00	
Control						
Before education	40	80.25 ± 13.77	40.00	95.00	72.50	
1st Education	40	79.50 ± 15.18	40.00	100.00	70.00	$\chi^2 = 0.66$
2nd Education	40	81.37 ± 14.06	45.00	100.00	70.00	$p = 0.882$
3rd Education	40	78.87 ± 14.75	45.00	100.00	70.00	

Abbreviation: ADL, activities of daily living.

Group	$\bar{x} \pm SD$	Min.	Max.	Median	Wilcoxon test	Cohen's <i>d</i>
Intervention						
Before education	9.02 ± 3.70	2.00	17.00	8.50	$p = 0.001^*$	0.36
After education	10.40 ± 3.93	3.00	18.00	10.00		
Control						
Before education	8.27 ± 3.38	1.00	16.00	6.00	$p = 0.06$	0.36
After education	7.07 ± 3.11	3.00	17.00	6.50		

TABLE 2 ADLs and LSS scores of elders in intervention and control groups before and after the education ($N = 40$)

TABLE 3 Distribution of Barthell ADLs scores between intervention and control groups

TABLE 4 Mean scores of intervention and control group elders in Life Satisfaction Scale before and after the education ($N = 40$)

Table 4 presents the LSS scores of elders in the intervention group, which increased after every education session, whereas no increase was observed in the control group, indicating that the education provided yielded the desired effect on the life satisfaction

levels of the elders. Regarding Cohen's *d*, the effect size of education was high on LSS scores (Cohen's *d* > 0.2).

There was a positive relationship between the ADLs scores in the intervention group before education ($r = 0.520$; Table 5). The ADLs

TABLE 5 Distribution of Life Satisfaction Scale scores of intervention and control groups

Group	n	$\bar{x} \pm SD$	Min.	Max.	Median	Friedman test
Intervention						
Before education	40	9.02 ± 3.70	2.00	17.00	8.50	
1st Education	40	9.72 ± 4.34	2.00	18.00	10.00	$\chi^2 = 36.01$
2nd Education	40	9.95 ± 3.92	3.00	17.00	10.00	$p = 0.001^*$
3rd Education	40	10.40 ± 3.93	3.00	18.00	10.00	
Control						
Before education	40	8.27 ± 3.38	1.00	16.00	6.00	
1st Education	40	7.65 ± 2.94	3.00	17.00	6.00	$\chi^2 = 12.27$
2nd Education	40	7.17 ± 2.92	3.00	17.00	7.00	$p = 0.006^*$
3rd Education	40	7.07 ± 3.11	3.00	17.00	6.50	

score increased with the increase in the LSS score, and the coefficient of this relationship was statistically significant ($p < 0.05$). A positive relationship was also found between the scale scores of the elders in the control group ($r = 0.334$). The ADLs score of elders in the control group increased with the increase in the LSS score, and the coefficient of this relationship was statistically significant ($p < 0.05$). Together, these findings suggest that the life satisfaction and independence levels of individuals increase in parallel with each other; individuals with an increasing level of independence also have an increased level of life satisfaction.

4 | DISCUSSION

In the literature, certain fundamental needs (personal care, nutrition, excretion, mobility, bath) have been shown to be negatively affected by advancing age (Kankaya & Karadakovan, 2017). In this study, which was conducted on the effect of education on the level of independence and life satisfaction of the elderly in daily living activities (ADL), it was determined that the planned education provided increased the level of independence in daily living activities in the elderly.

Accordingly, it was determined that the level of independence in daily living activities increased as a result of repeated planned education given to the elderly. This finding suggests that planned education provided to elders might decrease their level of dependence because the functional insufficiencies that develop with age make them become dependent. Many studies conducted with elders have reported that ADL is influenced by advancing age and that their level of dependence increases (Moraes et al., 2019).

In Turkey and in other countries, many studies have reported that planned education programs have positive effects on independence levels (Ku et al., 2016; Luo et al., 2017). In Holland, the effects of self-management support programs on the ADL of elders given by nurses had a positive effect on elders in terms of performing their ADL (Het Bolscher-Niehuis et al., 2016). In a study on the efficiency of education provided to increase the functional independence of

patients having spinal cord injury, completely dependent patients became medium-level dependent after the education sessions, and as a result of an increase in their level of independence, their quality of life also increased (Seo et al., 2017).

In many studies emphasizing the need to support the independence of elders in ADL, the educative role of nurses has been highlighted (Het Bolscher-Niehuis et al., 2016). In studies examining the effectiveness of education given, it has been shown that continuous and uninterrupted education increases the independence level of elders, allowing them to age more actively (Roets-Merken et al., 2018). Accordingly, the effective use of nurses' educative role would enable elders to maintain their independence.

Another important result obtained from this study is that education increases life satisfaction in the elderly. Thus, the elders' life satisfaction increased as a result of the face-to-face interviews, socializing with other elders, and increased self-esteem as a result of increased dependence after the education sessions. The literature shows that factors that significantly affect elders' life satisfaction include their health status and economic conditions (Ng et al., 2017). In a study conducted by Softa in Turkey, it was found that elders living in a nursing home had a medium level of life satisfaction (Kaçan Softa et al., 2016). As their age advances, the social interactions of elders decrease, and their life satisfaction also decreases with fewer social interactions (García & Ramírez Navarro, 2018). In the present study, an analysis of the relationship between elders' gender and life satisfaction revealed no significant differences.

A study carried out in Iran on 250 elders reported that the gender and educational status of elders were among the factors affecting their life satisfaction (Chehregosha et al., 2015). In Turkey, Altay, and Avci reported that the life satisfaction of male patients was at a higher level (Erci et al., 2017). Although there was no significant relationship between age groups and life satisfaction of elders in the present study, a previous study on adults in Shanghai reported that the elders aged 80 years and older were more fragile/sensitive than those aged between 65 and 79 years; their life satisfaction decreased with an increase in fragility/sensitivity, and the relationship was found to be statistically significant (Yang et al., 2016). According to

these results, the relationship between sensitiveness/fragility and life satisfaction weakens as age advances. In another study carried out in Poland on 463 elders, it was observed that the life satisfaction of elders changed depending on age. As age advanced, the elder's life satisfaction decreases (Kankaya & Karadakovan, 2017). A study in our country reported that the chronic diseases of elders and their occupational status affected their life satisfaction, and the level of life satisfaction of elders with a chronic disease diagnosis was found to be at a lower level (Softa et al., 2015). This is consistent with the findings of the present study. Although chronic disease diagnosis increased the elders' level of life satisfaction, no statistically significant difference was found in the present study ($p > 0.05$). However, we found that the mental levels of elders affected their life satisfaction. The decreasing level of cognition decreased the elders' level of life satisfaction. These results are in congruence with similar findings reported in the literature (Softa et al., 2015).

A review of many studies examining the effects of planned education on elders' quality of life and life satisfaction revealed that providing education increased the life satisfaction of the elders. This increase in the life satisfaction of elders based on health protection can be assessed by analyzing their ADL and developing healthy life behaviors (Lim et al., 2017). It was reported that elders need care education depending on various physical and mental changes in the elderliness period (Zhou et al., 2020).

In the first interviews with participants in the present study, there was a positive ($r = 0.520$) relationship between life satisfaction and independence level ($r = 0.520$). Accordingly, the ADLs score increased as the individual's level of life satisfaction increased and the relationship coefficient was statistically significant ($p < 0.05$). The data obtained showed that there was a significant relationship between independence level and life satisfaction; one of these parameters increased or decreased as the other increased or decreased. In a comprehensive study carried out on 653 elders randomly selected from 30 different rural areas in India, the relationship between elders' family bonds, dependencies, and life satisfaction was examined. According to the study, the impairment of elders' health increased their dependence. The family relationships of elders with increasing dependency deteriorate and, consequently, their life satisfaction decreases (Kapıkıran, 2016). Karadakovan and Kankaya examined the relationship between elders' independence level and life satisfaction and reported that there was a significant relationship between these parameters, with life satisfaction increasing or decreasing with corresponding increases and decreases, respectively, in independence (Neugarten et al., 1961). In many studies, performance in ADL has been shown to affect elders' life satisfaction (Ng et al., 2017; Zhou et al., 2020).

5 | CONCLUSION

The literature reveals that an improvement in elders' independence levels can be achieved by making use of self-management programs and planned education. Accordingly, the maintenance of elders'

independence can be achieved by having nurses efficiently use their educative role. The findings of the present study show that independence and life satisfaction increased and decreased in parallel with each other, indicating that increasing elders' level of independence drives a higher level of life satisfaction. Thus, given his/her educative role, the geriatric nurse should plan educational programs with multidimensional evaluations and a holistic approach to positively influence elders' independence levels and life satisfaction.

IMPLICATIONS FOR PSYCHIATRIC NURSING PRACTICE

Psychiatric nursing has an important role in caring for the elderly. Aging is a developmental process that is evaluated from a biopsychosocial perspective and includes many psychological concepts such as body image, life satisfaction, and quality of life. For this reason, nurses, who evaluate the elderly in all aspects, aim to ensure that the elderly reach the optimal health level in terms of mental and psychological. Some education plans in old age increase the life satisfaction of the elderly by enabling them to be self-sufficient, support their independence and support their mental development.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request. Comments from the journal concerning the production of the paper: Sincerely, Sunmathi Devadas ppc-admin@wiley.com *Perspectives in Psychiatric Care*. The data that support the findings of this study are available from the corresponding author upon reasonable request.

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