

Research Article

Investigation of the Effects of Loneliness Levels on Healthy Aging and Adaptation Difficulties in Nursing Home Residents

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Objective: This study aimed to examine the effects of loneliness levels on healthy aging and adaptation difficulties among elderly individuals living in nursing homes.

Materials and Methods: This study was designed as a cross-sectional and correlational study. The study population consisted of 354 elderly individuals residing in nursing homes in a provincial center in Türkiye. No sampling method was applied; instead, 201 elderly individuals who met the inclusion criteria and were randomly accessible formed the study sample. The inclusion criteria were as follows: those residing in a nursing home, having no mental health issues, being literate, and having no hearing or vision impairments. Data were collected through face-to-face interviews between November 2023 and February 2024. The data collection instruments included a Personal Information Form, the Loneliness Scale (LS), the Healthy Aging Scale (HAS), and the Adaptation Difficulty Scale for the Elderly (ADSE).

Results: The study found a significant negative correlation between loneliness and healthy aging, a significant negative correlation between adaptation difficulty and healthy aging, and a significant positive correlation between loneliness and adaptation difficulty ($p < 0.01$). Additionally, it was determined that loneliness was influenced by healthy aging at a rate of 13.6% and by adaptation difficulty at a rate of 13.8%.

Conclusion: The findings indicate that the levels of loneliness, healthy aging, and adaptation difficulties among the elderly were within normal ranges and that these three factors influenced each other. The study demonstrated that loneliness negatively affects the healthy aging process and increases adaptation difficulties. It is recommended to strengthen social support mechanisms in nursing homes, encourage social interaction among elderly individuals through various activities, and implement psychosocial support programs. Additionally, promoting the use of digital communication tools to strengthen connections with family and society is considered essential.

Keywords: adaptation difficulty; healthy aging; loneliness; nursing; psychiatry

1. Introduction

Aging is a dynamic process shaped by the interaction of biological, psychological, and social factors. During this process, individuals encounter various challenges, such as a decline in physical capacity, the emergence of chronic diseases, and changes in social roles [1]. According to the World Health Organization (WHO), healthy aging is defined as the process of developing and maintaining the

functional ability that enables well-being in older age, which includes maintaining cognitive, psychological, and social functions, not just the absence of disease [2].

The concept of healthy aging encompasses multiple domains such as physical health, mental health, social participation, and autonomy, all of which contribute to overall quality of life [3]. However, elderly individuals living in institutional care settings such as nursing homes are more vulnerable to social isolation and loneliness [4]. Loneliness

among older adults is recognized as a significant public health issue, with epidemiological studies reporting high prevalence rates and linking loneliness to adverse health outcomes including increased morbidity and mortality [5]. These issues can negatively impact both psychosocial adaptation and the healthy aging process, ultimately reducing their quality of life.

Loneliness is defined as the dissatisfaction and sense of deficiency that arises when an individual's social relationships are insufficient or fail to meet their expectations [6]. Among elderly individuals, loneliness directly affects the healthy aging process, leading to both psychological and physical health problems [7]. The literature suggests that feelings of loneliness are associated with mental health issues such as depression, anxiety, and cognitive decline [8]. Moreover, loneliness has significant effects on physical health, including a weakened immune system, increased risk of cardiovascular diseases, and a shortened lifespan [9]. One of the fundamental components of healthy aging is the preservation of physical and cognitive functionality, which is closely linked to managing feelings of loneliness. Another essential aspect of healthy aging is the ability of individuals to maintain lifelong social participation [10]. However, for individuals residing in nursing homes, weakened social support systems and detachment from their social environment make this process more challenging [11]. In nursing home settings, elderly individuals may become disengaged from their previous social roles, leading to a passive lifestyle that hinders the healthy aging process and contributes to adaptation difficulties. Research indicates that elderly individuals living in nursing homes are more prone to social isolation, which in turn diminishes their psychosocial functionality [12]. Consequently, individuals experiencing intense loneliness may struggle to adapt to their new living environment, and in some cases, they may fail to adjust altogether [13].

Adaptation difficulty is defined as an individual's inability to adapt to new living conditions and a perceived inadequacy in coping with these changes [13]. For elderly individuals who have lived independently for many years, transitioning to a nursing home environment can be a complex and stressful process. Those who fail to adapt may experience psychological issues such as depression, anxiety, low self-esteem, and loss of motivation. Additionally, the lack of social interaction and persistent loneliness can reduce their sense of self-efficacy, leading to a passive lifestyle [14]. This process diminishes their potential for healthy aging, negatively impacting both their physical and mental health. At this point, professionals working in the field of elderly health have various intervention strategies to address loneliness and adaptation difficulties. Cognitive behavioral therapy (CBT), group therapy, and activities that encourage social interaction are recommended to reduce feelings of loneliness and support the healthy aging process [4]. CBT is an effective method for alleviating loneliness and altering negative thought patterns. Group therapy helps strengthen elderly individuals' social support networks and enhances their interactions [15]. Additionally, technology-assisted social bonding programs can contribute to reducing social isolation by enabling elderly individuals to maintain

communication with their families and friends [16]. Providing individual counseling services to elderly individuals in nursing homes can be a crucial factor in facilitating their adaptation to the institutional environment and supporting their healthy aging process [12].

In this context, understanding the epidemiology and health consequences of loneliness among elderly populations is critical for developing effective interventions and health policies aimed at promoting healthy aging and improving quality of life [5]. Examining the impact of loneliness levels on healthy aging and adaptation difficulties among elderly individuals residing in nursing homes is therefore of great importance. This study aims to analyze in-depth the effects of loneliness and adaptation difficulties on elderly individuals and to evaluate applicable intervention methods. Additionally, the study's findings are expected to guide the development of health policies that address the psychosocial needs of elderly individuals living in nursing homes.

2. Methods

This study was conducted to examine the effects of loneliness levels on healthy aging and adaptation difficulties among elderly individuals residing in nursing homes. The research questions are as follows:

1. Does loneliness level affect healthy aging among elderly individuals in nursing homes?
2. Does loneliness level affect adaptation difficulties among elderly individuals in nursing homes?
3. Is there a relationship between loneliness, healthy aging, and adaptation difficulties among elderly individuals in nursing homes?

This research was conducted using a quantitative approach, employing a cross-sectional correlational study design. This design allows for an examination of the relationships between loneliness levels, healthy aging, and adaptation difficulties among participants. In this study, loneliness level was considered the independent variable, while healthy aging and adaptation difficulties were the dependent variables.

2.1. Population and Sample. The study population consisted of 354 elderly individuals residing in nursing homes located in a city center in Türkiye. The study sample included 201 elderly individuals who met the predetermined inclusion criteria and were accessible during the data collection process. Since participants were selected based on accessibility and willingness to participate, a convenience sampling method was employed. The inclusion criteria were as follows: residing in a nursing home, having no diagnosed mental health problems, being literate, and having no hearing or visual impairments.

2.2. Data Collection. Data were collected through face-to-face interviews between November 2023 and February 2024. The data collection instruments included a Personal

Information Form, the Loneliness Scale (LS), the Healthy Aging Scale (HAS), and the Adaptation Difficulty Scale for Elderly (ADSE).

2.3. Personal Information Form. The Personal Information Form was prepared by researchers based on the literature and included demographic variables such as age, gender, marital status, place of birth, educational background, profession, and participation in nursing home activities.

2.4. LS. LS was developed by Gierveld and Kamphuis in 1985 to measure loneliness [17]. The Turkish validity and reliability study was conducted by Akgül and Yeşilyaprak in 2015 [18]. The scale consists of 11 items divided into two subdimensions: six items (2, 3, 5, 6, 9, 10) measure emotional loneliness as negative statements, while five items (1, 4, 7, 8, 11) measure social loneliness as positive statements. The total loneliness score is calculated by summing the emotional and social loneliness scores. The scale uses a three-point Likert system (0 = yes, 1 = maybe, 2 = no). The lowest possible score is 0, and the highest is 22, with higher scores indicating higher loneliness levels. The Cronbach's alpha coefficient for the scale was reported as 0.85 [18], while in this study, it was found to be 0.68.

2.5. HAS. This scale was developed by Thiamwong et al. in 2008 [19] and was adapted into Turkish by Yıldırım et al. [20]. Following the Turkish validity and reliability study, four items (9, 16, 20, 32) were removed, resulting in a 31-item scale with eight subdimensions. The scale's subdimensions are F1. Staying physically active (1–6), F2. Having social support and relationships (11–15), F3. Managing stress (31, 33–35), F4. Accepting aging and self-sufficiency (21–24), F5. Awareness and self-care (17–19), F6. Doing good deeds (28–30), F7. Staying cognitively active and participating in social activities (7, 8, 10), and F8. Living simply and virtuously (25–27) [20]. Higher scores on the scale and subdimensions indicate healthier aging. The total possible score ranges from 35 to 175. The Cronbach's alpha coefficient for the scale was reported as 0.88 [20], while in this study, it was found to be 0.82.

2.6. ADSE. ADSE was developed by Şişman and Kutlu in 2015 [21]. The scale consists of 24 items and uses a four-point Likert system (0 = never, 1 = somewhat, 2 = quite, 3 = very). The total score is calculated as an average, with scores closer to 0 indicating a higher level of adaptation. The scale includes four subdimensions: "Role and Self-Realization," "Mutual Attachment," "Physiological Condition," and "Self-Perception." The Cronbach's alpha coefficient for the scale was reported as 0.83 [21], while in this study, it was found to be 0.80.

2.7. Statistical Analysis. Data were analyzed using SPSS 24 (Statistical Program for Social Sciences). The normality of the data distribution was assessed using the Kolmogorov-

Smirnov test, which indicated that some variables were normally distributed while others were not. Statistical analyses included percentages, frequencies, standard deviation, Cronbach's alpha coefficient, Pearson correlation analysis, *t*-tests, one-way ANOVA, Mann-Whitney *U* test, Kruskal-Wallis test, and simple linear regression analysis.

2.8. Ethical Considerations. Ethical approval for the study was obtained from the Scientific Research and Publication Ethics Committee of Muş Alparslan University on 02.01.2023 with decision number 1–56, and institutional permission was granted on 30.09.2023. Additionally, written informed consent was obtained from all participants.

3. Results

The descriptive characteristics of the elderly individuals included in the study are presented in Table 1. The participants had a mean age of 72.51 ± 7.62 years, a mean marriage duration of 18.72 ± 24.37 years, and a mean length of stay in the nursing home of 3.87 ± 3.70 years. The majority were single (75.6%), lived in the city center (40.3%), were primary school graduates (51.7%), retired (63.1%), and participated in nursing home activities (54.7%). These characteristics reflect a predominantly single, retired, and lower-educated sample, which may increase vulnerability to psychosocial challenges due to reduced family interaction and limited social engagement.

When examining the relationship between participants' descriptive characteristics and scale scores:

- A significant positive correlation was found between age and LS scores ($p < 0.05$). Additionally, loneliness scores were significantly higher among those living in towns/districts, retired individuals, and those participating in nursing home activities ($p < 0.05$) (Table 1).
→ This suggests that aging and disengagement from active professional or family life may contribute to increased feelings of loneliness, even when involved in institutional activities.
- For HAS, primary school graduates and individuals who participated in nursing home activities had significantly higher scores ($p < 0.05$).
→ This implies that even basic education and structured social engagement can positively influence perceptions and behaviors associated with healthy aging (Table 1).
- ADSE scores were positively correlated with age and marriage duration ($p < 0.05$). Higher adaptation difficulty was observed among single, retired individuals and those involved in institutional activities ($p < 0.05$) (Table 1).
→ These results point to a need for greater support in facilitating the institutional adjustment of older, socially isolated residents.

Regarding scale scores and subdimensions (Table 2):

TABLE 1: The relationship between the descriptive characteristics of elderly individuals and their scale score averages ($n=201$).

Characteristic	Mean \pm SD	Min-max	LS		HAS		ADSE	
			Test and p value	Mean \pm SD	Test and p value	Mean \pm SD	Test and p value	Mean \pm SD
Age	72.51 \pm 7.62	57-92	$r = 0.142$ $p = 0.044$		$r = -0.101$ $p = 0.153$		$r = 0.260$ $p < 0.001$	
Duration of marriage	18.72 \pm 24.37	0-70	$r = 0.015$ $p = 0.834$		$r = -0.069$ $p = 0.332$		$r = 0.253$ $p < 0.001$	
Duration of stay in nursing home	3.87 \pm 3.70	1-21	$r = 0.234$ $p < 0.001$		$r = -0.033$ $p = 0.640$		$r = -0.065$ $p = 0.361$	
	n	%	Mean \pm SD	Test and p value	Mean \pm SD	Test and p value	Mean \pm SD	Test and p value
Marital status								
Married	49	24.4	12.24 \pm 4.47	$bT = -0.643$	115.24 \pm 10.76	$bT = 0.274$	1.01 \pm 0.53	$bT = -3.578$
Single	152	75.6	11.75 \pm 4.74	$p = 0.571^{**}$	115.97 \pm 17.54	$p = 0.784^{**}$	0.71 \pm 0.50	$p < 0.001^{**}$
Birthplace								
Village	45	22.4	9.84 \pm 3.75	$aF = 9.586$	112.51 \pm 13.51	$aF = 1.206$	0.83 \pm 0.55	$aF = 0.353$
Town/district	75	37.3	13.46 \pm 3.76	$p < 0.001^{**}$	116.82 \pm 14.73	$p = 0.302^{**}$	0.78 \pm 0.73	$p = 0.703^{**}$
City	81	40.3	11.51 \pm 5.37		116.66 \pm 18.46		0.75 \pm 0.58	
Education level								
Illiterate	30	14.9	12.76 \pm 3.93	$aF = 0.462$	100.66 \pm 13.81		0.84 \pm 0.45	$aF = 1.435$
Primary school	104	51.7	11.77 \pm 4.53	$p = 0.709^{**}$	119.13 \pm 13.34	$aF = 12.264$	0.81 \pm 0.53	$p = 0.234^{**}$
High school	44	21.9	11.70 \pm 4.68		117.40 \pm 13.59	$p < 0.001^{**}$	0.80 \pm 0.43	
University and above	23	11.4	11.43 \pm 6.12		117.34 \pm 23.41		0.57 \pm 0.69	
Occupation								
Retired	127	63.1	12.80 \pm 4.67		116.26 \pm 17.04		0.83 \pm 0.53	
Civil servant	5	2.5	6.40 \pm 6.02		94.60 \pm 25.19	$cKW = 6.632$	0.07 \pm 0.06	$cKW = 11.630$
Worker	10	5	12.40 \pm 1.95	$cKW = 14.999$	110.60 \pm 2.27	$p = 0.085^{**}$	0.80 \pm 0.48	$p = 0.009^{**}$
Self-employed	59	29.4	10.23 \pm 4.17	$p = 0.002^{**}$	117.45 \pm 13.25		0.74 \pm 0.49	
Participation in nursing home activities								
Yes	100	54.7	10.74 \pm 4.77	$bT = -3.882$	119.76 \pm 14.51	$bT = 3.971$	0.65 \pm 0.52	$bT = -3.86$
No	91	45.3	13.23 \pm 4.18	$p < 0.001^{**}$	111.00 \pm 16.76	$p < 0.001^{**}$	0.94 \pm 0.48	$p < 0.001^{**}$

Note: The bold text indicates statistical significance.

^aTest one-way ANOVA.

^bIndependent-sample T test.

^cKruskal-Wallis test.

** $p < 0.01$.

TABLE 2: Distribution of minimum, maximum, and mean scores of the loneliness, healthy aging, and adaptation difficulty scales in elderly individuals.

Scale and subscales	N	Min score	Max score	Mean ± SD
Loneliness scale (LS)	201	2	21	11.87 ± 4.67
Emotional loneliness subscale	201	1	12	7.71 ± 2.86
Social loneliness subscale	201	0	10	4.15 ± 2.98
Healthy aging scale (HAS)	201	63	155	115.79 ± 16.13
Physiological active aging subscale	201	8	30	20.58 ± 5.16
Social support and relationships subscale	201	5	25	16.99 ± 5.08
Stress management subscale	201	4	20	13.34 ± 4.87
Acceptance of aging and self-sufficiency	201	11	20	16.83 ± 2.64
Self-care and awareness subscale	201	5	15	11.91 ± 2.71
Doing good deeds subscale	201	5	15	13.53 ± 1.98
Cognitive activity and participation in social activities subscale	201	3	15	9.13 ± 4.10
Living simply and virtuously subscale	201	7	15	13.46 ± 1.97
Adaptation difficulty scale in elderly (ADSE)	201	0	0.9	0.03 ± 0.02
Role and self-realization subscale	201	0	2.44	0.87 ± 0.60
Mutual attachment subscale	201	0	1.86	0.54 ± 0.49
Physiological condition subscale	201	0	2.75	0.55 ± 0.63
Self-identity subscale	201	0	2.38	0.31 ± 0.37

- The mean LS score was 11.87 ± 4.67 , indicating a moderate level of loneliness. Emotional loneliness (7.71 ± 2.86) was higher than social loneliness (4.15 ± 2.98), highlighting a stronger need for emotional connection among participants (Table 2).
- The mean HAS score was 115.79 ± 16.13 , reflecting generally good healthy aging levels. Notably, the highest subscale scores were in Physical Activity, Social Support and Relationships, and Doing Good Deeds, suggesting that many participants remained functionally and morally engaged (Table 2).
- The mean ADSE score was 0.03 ± 0.02 , indicating low adaptation difficulty. However, scores on subscales such as Role and Self-Realization and Physiological Condition suggest that some participants faced challenges related to identity, autonomy, and physical well-being (Table 2).

Correlational Findings (Table 3).

- A significant negative correlation was found between HAS total score and ADSE total and subscale scores (e.g., Role and Self-Realization $r = -0.299$, $p < 0.01$), indicating that better aging outcomes are associated with lower levels of adaptation difficulty (Table 3).
→ Promoting healthy aging through supportive interventions may ease the institutional adjustment process.
- A significant negative correlation also emerged between HAS and LS scores ($r = -0.369$, $p < 0.01$), suggesting that individuals experiencing healthier aging reported lower levels of loneliness (Table 3).
→ This reinforces the potential of healthy aging as a protective factor against social-emotional isolation.
- ADSE showed a negative correlation with HAS subscales such as Social Support and Relationships

($r = -0.213$), Stress Management ($r = -0.328$), and Cognitive Activity ($r = -0.380$) ($p < 0.01$) (Table 3).

→ Stronger psychosocial and cognitive resources may help mitigate adaptation difficulties in institutionalized elderly.

- A positive correlation was found between ADSE and LS ($r = 0.372$, $p < 0.01$), indicating that those who struggle more with institutional adjustment also experience higher loneliness (Table 3).
→ This emphasizes the interplay between emotional adaptation and perceived isolation.
- LS was negatively correlated with several HAS subscales, including Social Support ($r = -0.387$), Stress Management ($r = -0.328$), and Self-Care ($r = -0.249$) ($p < 0.01$) (Table 3).
→ Enhanced coping skills and supportive relationships are strongly linked to reduced loneliness.
- LS was positively correlated with ADSE subscales like Role and Self-Realization ($r = 0.404$) and Mutual Attachment ($r = 0.410$), suggesting that difficulty in defining one's role and forming meaningful bonds contributes to loneliness (Table 3).

Regression Findings (Table 4).

Regression analysis revealed that:

- Healthy aging had a weak but statistically significant negative effect on loneliness ($R = 0.369$, $R^2 = 0.136$, $p < 0.01$) (Table 4).
- Adaptation difficulty had a weak but significant positive effect on loneliness ($R = 0.372$, $R^2 = 0.138$, $p < 0.01$) (Table 4).

These results indicate that 13.6% of the variance in loneliness can be explained by healthy aging, and 13.8% by adaptation difficulty (Table 4).

TABLE 4: Regression analysis for predicting healthy aging and adaptation difficulty in elderly individuals by the Loneliness Scale ($n = 201$).

Independent variable	Dependent variable	<i>B</i>	Std. error	(β)	<i>t</i>	<i>p</i>	<i>R</i>	<i>R</i> ²	<i>F</i>	<i>p</i>
LS	HLS	130.930	2.900	-0.369	45.144	0.000	0.369	0.136	31.432	0.000**
	ADSE	0.012	0.004	0.372	3.034	0.000	0.372	0.138	31.867	0.000**

Note: The areas in bold indicate that the *p* value is less than $p < 0.01$ as a result of the test.
 ** $p < 0.01$.

→ While the effects are modest, both variables meaningfully contribute to understanding loneliness among institutionalized older adults. Enhancing healthy aging and reducing adaptation difficulties may be practical targets for reducing loneliness in this population.

4. Discussion

This study was conducted to examine the effects of loneliness levels on healthy aging and adaptation difficulties among elderly individuals residing in nursing homes.

When the research findings were examined, a significant positive correlation was found between age and the total score of the LS. This finding indicates that the feeling of loneliness increases with age. Similarly, a meta-analysis conducted by Gardiner et al. [22] revealed that 61% of elderly individuals living in nursing homes experience moderate loneliness, while 35% experience severe loneliness. The consistency of this result with the literature may be explained by the progressive loss of mobility, autonomy, and social contact that often accompany advanced age. This situation can be associated with the increasing physical and social limitations of elderly individuals.

The study found that the level of adaptation difficulty was significantly higher among single participants compared to married individuals. This suggests that single elderly individuals are more likely to experience adaptation difficulties. This highlights the potential protective role of spousal or close emotional support in facilitating adjustment to institutional life. Similarly, Altuparmak [23] reported that the loss of social support among elderly individuals in nursing homes has a strong impact on their health and can cause difficulties in their adaptation processes.

In this study, the total scores of HAS were found to be significantly higher among participants who were primary school graduates compared to other groups. This finding suggests that education level has a positive impact on healthy aging. The literature also highlights that individuals with higher education levels tend to have greater health awareness, contributing to healthy aging. Erel and Uygur [24] reported that elderly individuals with higher education levels exhibit better physical performance and quality of life. This supports the idea that even a basic level of formal education may enhance individuals' ability to engage in health-promoting behaviors later in life, especially in institutional care settings.

The study also found that participants who engaged in nursing home activities had significantly lower loneliness levels and more favorable healthy aging and adaptation difficulty scores compared to those who did not participate. This finding suggests that participation in social activities

supports the psychosocial well-being of elderly individuals. Similarly, Bonifas [25] emphasized that social relationships among nursing home residents have significant effects on psychosocial outcomes and that staff should support these relationships. These results underscore the importance of structured activity programs in institutional care as a low-cost and effective strategy to mitigate loneliness and promote adaptation.

The mean score of the LS was found to be 11.87 ± 4.67 , indicating a moderate level of loneliness among elderly individuals. When subscales were examined, the mean score for Emotional Loneliness was 7.71 ± 2.86 , while that for Social Loneliness was 4.15 ± 2.98 . These results indicate that emotional loneliness levels are higher than social loneliness levels. A meta-analysis by Gardiner, Laud, Heaton, and Gott [22] found that 61% of elderly individuals in nursing homes experience moderate loneliness, while 35% experience severe loneliness. This situation is associated with increasing physical and social limitations among elderly individuals [22]. Similarly, a study examining the relationship between loneliness perception and social media use among elderly individuals living at home found that the mean score for the emotional loneliness subscale was 7.474, while that for the social loneliness subscale was 7.320 [26]. This finding may reflect that institutional environments, while providing structured social contact, often fall short in fulfilling residents' deeper emotional needs—suggesting a disconnect between physical proximity and emotional intimacy.

The mean score of the HAS was found to be 115.79 ± 16.13 , indicating that elderly individuals were in a good state of healthy aging. Among the subscales, the highest mean score was in the Physical Activity subscale (20.58 ± 5.16), while the lowest mean score was in the Cognitive Activity and Participation in Social Activities subscale (9.13 ± 4.10). This contrast suggests that while physical routines may be preserved in institutional care, cognitive engagement and active social participation remain under-supported domains. The literature suggests that the healthy aging levels of elderly individuals are generally moderate [27, 28]. Erel and Uygur [24] also reported that elderly individuals with higher education levels exhibit better physical performance and quality of life.

The mean score of ADSE was found to be 0.03 ± 0.02 , indicating that elderly individuals did not experience significant adaptation problems. Among the subscales, the highest mean score was in the Role and Self-Realization subscale (0.87 ± 0.60), while the lowest mean score was in the Self-Perception subscale (0.31 ± 0.37). This may suggest that while general adaptation appears successful, elderly individuals still struggle with redefining their identity and life purpose in institutional settings. Previous studies on

adaptation difficulties among elderly individuals have reported similar findings [21, 29]. Bonifas [25] emphasized that social relationships among nursing home residents significantly impact psychosocial outcomes and that staff should support these relationships. Similarly, a study on the psychometric properties of ADSE reported that as scores approach zero, adaptation difficulties decrease [30].

A significant negative correlation was found between the total score of the HAS and the total score of the ADSE. This finding indicates that as healthy aging levels increase, adaptation difficulties decrease. This bidirectional relationship suggests that promoting either adaptation or healthy aging may positively influence the other, highlighting the need for integrated interventions in institutional care settings. Similar findings have been reported in the literature [31, 32]. Likewise, Demirel [33] found that as the level of elderly individuals' adaptation to aging increased, their healthy lifestyle behaviors also increased. Additionally, Kurtkapan [13] reported that adaptation to aging is effective in improving health-related quality of life [13].

A significant negative correlation was found between the HAS total score and the LS total score. This finding suggests that as the level of healthy aging increases, the feeling of loneliness decreases. This may indicate that internal resources associated with healthy aging such as self-care, emotional regulation, and purposefulness can buffer against loneliness, even within institutional settings where external social networks are limited. The literature also supports that promoting healthy aging processes can reduce negative emotions such as loneliness and depression [34, 35]. Gardiner et al. [22] conducted a meta-analysis revealing that 61% of elderly individuals in nursing homes experience moderate loneliness, while 35% experience severe loneliness. This situation is associated with increasing physical and social limitations among elderly individuals.

The study found significant negative correlations between the total score of ADSE and the subscales of Social Support and Relationships, Stress Management, and Cognitive Activity and Participation in Social Activities. These findings highlight that social support is not only a protective factor in itself but also reinforces other adaptive capacities such as stress management and cognitive engagement. In its absence, multiple psychosocial functions may decline concurrently, compounding adaptation difficulties. These findings suggest that as social support decreases, adaptation difficulties increase. In a study conducted by Kütmeç Yılmaz and Kıl [36] on 530 individuals aged 65 and above, it was reported that increased social support was associated with reduced adaptation difficulties in aging [29]. Various studies in the literature have examined the relationship between social support levels and adaptation processes in elderly individuals, demonstrating that higher social support reduces loneliness and psychological distress while social tensions have negative effects. Additionally, low social support increases adaptation difficulties in elderly individuals, negatively affecting functional outcomes and leading to a higher need for long-term care [34, 35, 37].

Overall, the existing literature supports the notion that social support and relationships play a critical role in the adaptation processes of elderly individuals, and a decrease in social support increases adaptation difficulties.

The study also determined that healthy aging levels had a weak but significant negative effect on loneliness. This finding indicates that as healthy aging levels increase, the feeling of loneliness decreases. This suggests that healthy aging does not merely coexist with lower loneliness, but may actively buffer individuals against it—potentially through increased autonomy, resilience, and cognitive functioning. Similarly, a study by Demirel [33] found that as the level of adaptation to aging increases, healthy lifestyle behaviors also increase. This suggests that as elderly individuals develop healthy lifestyle habits, their social interactions and overall life satisfaction increase, leading to reduced feelings of loneliness [34, 35].

The findings of this study indicate that loneliness explains 13.6% of the variance in healthy aging ($R^2 = 0.136$) and 13.8% of the variance in adaptation difficulties ($R^2 = 0.138$). Although these rates are relatively low, they were found to be statistically significant, highlighting the important impact of loneliness on both physical and psychosocial adaptation in elderly individuals. This relationship suggests that even modest increases in perceived loneliness can interfere with aging outcomes, making it a meaningful target for psychosocial interventions in institutional settings.

When reviewing the literature, the impact of loneliness on healthy aging has been emphasized in multiple studies. Cacioppo and Cacioppo [8] found that loneliness is associated with cognitive decline, depression, cardiovascular diseases, and lower life satisfaction. Hawkey and Capitanio [38] also stated that loneliness negatively affects the immune system and stress regulation mechanisms, impairing an individual's overall health. These findings indicate that loneliness significantly impacts the healthy aging process, but other variables also influence this process. Similarly, the effect of loneliness on adaptation difficulties has been extensively studied in the literature. Research has shown that lonely individuals experience greater difficulties in social relationships and adapting to new situations [39]. Luhmann and Hawkey [40] stated that feelings of loneliness can cause individuals to feel excluded in social settings and experience social anxiety. Our study found that loneliness explained 13.8% of adaptation difficulties, indicating that loneliness is a significant factor in the adaptation process, although individual and environmental factors also play a role. This finding suggests that the emotional and social components of loneliness can simultaneously erode physical resilience and psychological flexibility, both of which are essential for healthy aging and adaptation in later life.

These findings suggest that loneliness is related to both healthy aging and adaptation difficulties, but this relationship cannot be solely attributed to loneliness. The literature indicates that the impact of loneliness varies depending on individual factors (personality traits, psychological resilience) and environmental factors (social support systems, cultural structure). Steptoe et al. [41] found that social support

mechanisms mitigate the negative effects of loneliness and help individuals adapt more healthily to the aging process. These results indicate that loneliness is a statistically significant predictor, but its explanatory power remains limited due to the multifactorial nature of healthy aging and adaptation.

In conclusion, the research findings are consistent with existing literature, demonstrating that as healthy aging levels increase, feelings of loneliness decrease, whereas increasing adaptation difficulties lead to higher levels of loneliness. These findings underscore the dual importance of promoting healthy lifestyle habits and enhancing adaptation capacities in institutional settings. Therefore, strengthening social support mechanisms is essential to support healthy aging processes and reduce adaptation difficulties among elderly individuals.

5. Conclusion and Recommendations

The current findings indicate that the demographic characteristics and participation in social activities of elderly individuals living in nursing homes have significant effects on their psychosocial well-being. Factors such as age, marital status, education level, and participation in social activities are closely related to loneliness perception, healthy aging, and adaptation processes. Therefore, increasing social activities in nursing homes and encouraging elderly individuals to participate in these activities is essential for supporting their psychosocial well-being.

The study found that elderly individuals generally experienced moderate loneliness, were in a good state of healthy aging, and did not face significant adaptation difficulties. In conclusion, the research findings align with existing literature, demonstrating that increased levels of healthy aging are associated with decreased adaptation difficulties and loneliness, while stronger social support and relationships positively contribute to the adaptation process.

5.1. Recommendations

- Increase social activities in nursing homes and encourage elderly individuals to participate.
- Expand peer support programs and volunteer visits to reduce feelings of loneliness.
- Adopt approaches that strengthen physical, mental, and emotional health to support the healthy aging process.
- Provide guidance and counseling services to facilitate the adaptation process for new residents.
- Strengthen family, friend, and community relationships through visit programs and digital communication tools.
- Future studies should explore the relationship between healthy aging, loneliness, and adaptation in more detail and conduct cross-cultural comparative studies.

5.2. Strengths and Limitations. This study comprehensively examined the relationships between loneliness, healthy aging, and adaptation difficulties among elderly residents of

nursing homes. The use of validated scales and face-to-face data collection enhanced the reliability of the findings. However, the cross-sectional design limits causal inferences, and the sample restricted to nursing homes in a single province reduces generalizability. Excluding individuals with mental health issues, sensory impairments, or illiteracy may have led to underestimations of loneliness and adaptation difficulties. Additionally, important factors such as family visit frequency, staff support quality, and prior living conditions were not assessed. The introduction could benefit from a more detailed conceptual framework. Future research should include diverse populations, employ longitudinal designs, and utilize objective measurement methods.

Data Availability Statement

The datasets generated and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Conflicts of Interest

The authors declare no conflicts of interest.

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