







## Hope, spirituality, health perception and life satisfaction among older adults using thermal tourism services in Turkey

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### ABSTRACT

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#### Keywords

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Although it is widely recognized that hope and spirituality have a positive impact on aging, there is a significant lack of research investigating the mediating role of health perceptions in converting these resources into life satisfaction, especially in the specific context of thermal tourism. To address this gap, a cross-sectional mediation analysis was conducted to examine this association among 400 older adults (65 years and older) who visited thermal facilities in five Turkish provinces between October 2024 and February 2025. Participants were selected using convenience sampling, and data were collected using the Dispositional Hope Scale, Spiritual Well-Being Scale, Health Perception Scale, and Life Satisfaction Scale. Results showed that participants exhibited high levels of hope ( $M = 50.0$ ,  $SD = 7.07$ ), spiritual well-being ( $M = 31.7$ ,  $SD = 4.71$ ), and health perceptions ( $M = 49.4$ ,  $SD = 5.90$ ), while showing moderate levels of life satisfaction ( $M = 16.3$ ,  $SD = 4.76$ ). Path analysis revealed that hope ( $\beta = 0.295$ ,  $p < 0.001$ ) and spiritual well-being ( $\beta = 0.245$ ,  $p < 0.001$ ) significantly predicted life satisfaction. Furthermore, health perception partially mediated the relationship between hope and life satisfaction ( $\beta = 0.115$ ,  $p < 0.001$ ) and between spiritual well-being and life satisfaction ( $\beta = 0.042$ ,  $p < 0.05$ ). These results suggest that integrating psychosocial support into thermal tourism services can improve perceptions of health, overall well-being, and promote healthy aging.

**Contribution/Originality:** This study contributes to the existing literature by providing empirical evidence on the mediating role of health perception between hope, spirituality, and life satisfaction in older adults. It offers new insights into the specific psychosocial mechanisms through which thermal tourism supports holistic aging.

### 1. INTRODUCTION

Aging is a complex, lifelong process that, at the biological level, is caused by the accumulation of various molecular and cellular damages over time. This accumulation leads to a gradual decline in physical and mental capacities and an increased risk of disease, but these changes are neither linear nor consistent from person to person. Beyond biological factors, the experience of aging is strongly shaped by the physical and social environment, personal characteristics such as gender and ethnicity, and important life changes such as retirement. Therefore, this period of life requires a holistic perspective that addresses not only reducing physical decline but also promoting recovery, adaptation, and psychosocial growth (WHO, 2025). Advances in healthcare, along with increased life expectancy at

birth and declining fertility rates worldwide, are causing the proportion of older adults in the total population to rise steadily (Martinez et al., 2021). According to 2024 data from the United Nations, approximately 833 million people, or 10.2% of the world's population, are elderly. The top five countries with the highest elderly population ratios are Monaco, Japan, Italy, Portugal, and Greece. Türkiye ranks 75th among 194 countries with a ratio of 10.6% (TurkStat, 2024). The global increase in the aging population is a major challenge for social, economic and health systems worldwide (Papi & Cheraghi, 2021). In this regard, various programs and projects based on health behaviors, social support, recreation, leisure, and tourism are being developed to promote successful and healthy aging (Demir, Dağ, & Özpınar, 2024; Kalyoncuo & Kartın, 2025; Mandi, Bansod, & Goyal, 2023). In response to these demographic changes, health tourism has emerged as a fast-growing sector, and Türkiye has established itself as a highly attractive global destination due to its geographical advantage, quality medical infrastructure, and accessible treatment options (Toprakkale & Akın, 2025). One of the tourism activities with the highest participation rate among older adults, especially older adults with chronic diseases, is thermal tourism activities (Esiyok, Kurtulmuşoğlu, & Özdemir, 2018).

Once focused solely on treatment, thermal tourism has evolved into a multidimensional concept that integrates environmental sustainability, quality of life, and preventive health services. This transformation has redefined traditional health facilities into holistic tourism experiences. Its growing importance stems from increased life expectancy, the rising number of older adults participating in travel, and the widespread occurrence of psychosomatic problems such as stress, anxiety, and depression resulting from urbanization and disconnection from nature. Moreover, sedentary lifestyles, poor nutrition, postural issues, and the growing prevalence of loneliness accompanied by emotional, mental, and spiritual difficulties particularly in developed countries have made thermal tourism a valuable means of restoring physical and psychological well-being (Brandão, Liberato, Teixeira, & Liberato, 2021; Büyük & Akkuş, 2022; Demir et al., 2024). Thermal comfort in such senior-friendly environments is increasingly recognized as a multi-sensory experience that fundamentally supports healthy aging by alleviating environmental stress and enhancing psychological comfort (Chee, 2026). A stay at a thermal spa is experienced as a time to regain physical and emotional balance, to socialise, to update lifestyles and social identities, to improve the quality of life and to feel healthy (Demir et al., 2024; Garjan, Paydar, & Divsalar, 2023; Liu, Li, Kralj, Moyle, & He, 2022).

The World Health Organization (WHO) conceptualizes quality of life as the manner in which individuals perceive their position in life in relation to their objectives, expectations, standards, and concerns within the context of their cultural and value systems. This definition underscores the notion that quality of life is a holistic construct, shaped by the interaction of multidimensional elements such as physical health, psychological well-being, level of independence, social relationships, personal beliefs, and environmental conditions (Başçillar & Karakaya, 2025; Durmuş, Terzi, Kanbay, Özbay, & Gelin, 2024; Li et al., 2024). As people age, problems such as chronic disease, physical disability, pain, loneliness, geriatric depression, anxiety, and social isolation become more common, which can lead to a decrease in life satisfaction and negatively affect quality of life. Limitations in activities of daily living and reductions in activities are also important factors that diminish quality of life (Başçillar & Karakaya, 2025; Gunnes, Løe, & Kalseth, 2024; Puto, Kliś-Kalinowska, & Musiał, 2025; Shrestha, Cummings, Knopp-Sihota, Devkota, & Hoben, 2024). In addition, positive social support, leisure activities, hope, psychological and spiritual well-being and positive health perception are among the factors that improve the quality of life of older adults (Bahcecioglu, Özer, & Yanmıs, 2024; Çiftci, Yıldız, & Yıldırım, 2023; Demir et al., 2024; Zhou et al., 2021). Health perception is defined as individuals' subjective assessments of their physical, mental, and social well-being (Rañó-Santamaría et al., 2022). In older adults, this perception is influenced by various factors, including the presence of chronic diseases, functional independence, and psychological well-being (Khodabakhsh, 2022). Indeed, empirical evidence has demonstrated that individuals with high health literacy and the capacity to independently perform daily living activities exhibit more positive perceptions of health (Arpacı & Cantekin, 2024; Silva, Cancela, Mollinedo, Camões, & Bezerra, 2021). The positive health perception of individuals has been identified as a significant predictor of enhanced quality of life and elevated satisfaction levels (Khodabakhsh, 2022; Liu et al., 2023; Silva et al., 2021). The current

longitudinal findings further emphasize that life satisfaction is a dynamic construct. Changes in life satisfaction over time are directly related to changes in a person’s physical complaints and psychological anxiety (Hinz et al., 2025). Therefore, subjective health perceptions serve as a central component of quality of life, acting as an important bridge that interacts with other psychosocial resources such as social networks to buffer age-related challenges (Durmuş, Terzi, Kanbay, & Özbay, 2025). Hope is a dynamic psychosocial resource that supports individuals’ adaptation to the future and their capacity to make sense of life (Türk, Arslan, Kaya, & Yildirim, 2025). As indicated by the extant literature, elevated levels of hope have been demonstrated to have a significant impact on the prevalence of chronic diseases, the quality of sleep, and the adoption of healthy lifestyle behaviors, particularly in older adults (Erden, Köktürk Dalcalı, Güngörmüş, & Kaya, 2025; Khan, Hill, & O’Brien, 2023; Long et al., 2020; Pinto, Leite, Neris, & Kusumota, 2024). Furthermore, hope and spirituality have been demonstrated to contribute to overall well-being by strengthening life satisfaction and a sense of purpose in life (Pahlevan et al., 2021; Yaden et al., 2022).

However, an emerging body of literature presents contrasting results, indicating that the direct efficacy of these variables may be more complex than previously assumed. For instance, recent research has found that the direct relationship between spirituality and life satisfaction in older adults can be non-significant; instead, spirituality requires mediating psychological resources, such as dispositional resilience, to amplify its effect on life satisfaction (Gusilatar, Calungsod, Garcia, Santos, & Ruiz, 2025). Similarly, Bahcecioglu et al. (2024) observed that even though older Türkiye patients report high spiritual well-being, their overall life satisfaction often remains moderate unless actively bridged by psychosocial mechanisms such as hope. These mixed results suggest that having high levels of spiritual or hopeful internal resources does not automatically guarantee life satisfaction, especially when older adults simultaneously suffer from physical decline. Therefore, rather than assuming purely direct benefits, it is important to identify the cognitive and physical mechanisms that transform hope and spirituality into tangible well-being. Few studies have examined the possible mediating role of health perceptions in this context. Given that changes in physical health directly impact long-term life satisfaction (Hinz et al., 2025), older adults’ subjective evaluations of their health status may serve as this important missing link. However, in the field of thermal tourism, which focuses on both the physical health and psychological recovery processes of older adults, there are significant theoretical and practical gaps that can be filled by elucidating how health perceptions mediate the relationship between hope, spiritual well-being, and life satisfaction. Therefore, the purpose of this study is to examine the role of health perception as a mediator of the influence of hope and spiritual well-being on the life satisfaction of individuals aged 65 years and older benefiting from thermal tourism services in Türkiye. Figure 1 illustrates the research model and hypotheses developed by the authors for this purpose.

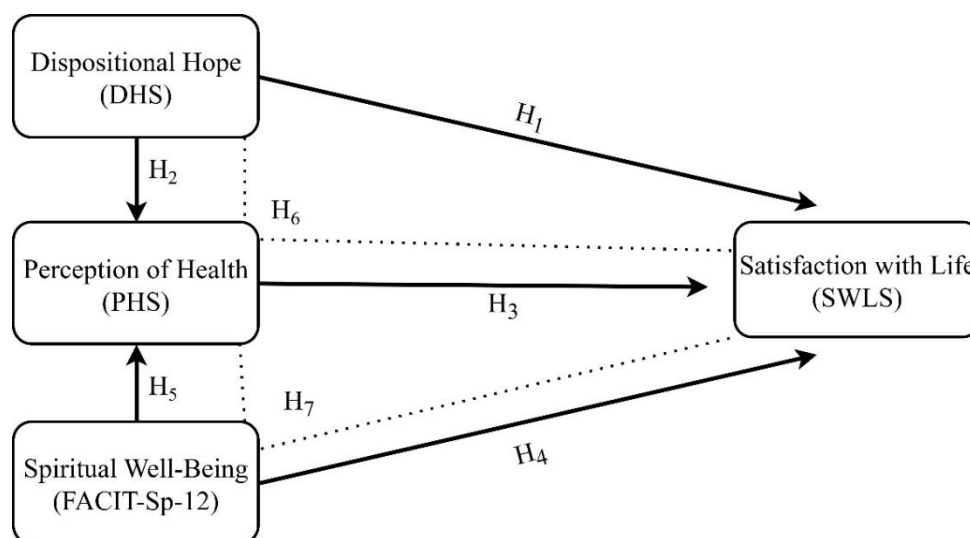


Figure 1. Research model.

### 1.1. Research Model and Hypotheses

*H<sub>1</sub>: Hope positively affects life satisfaction.*

*H<sub>2</sub>: Hope positively affects perception of health.*

*H<sub>3</sub>: Perception of health positively affects life satisfaction.*

*H<sub>4</sub>: Spiritual well-being positively affects life satisfaction.*

*H<sub>5</sub>: Spiritual well-being positively affects perception of health.*

*H<sub>6</sub>: Perception of health mediates the effect of hope on life satisfaction.*

*H<sub>7</sub>: Perception of health mediates the effect of spiritual well-being on life satisfaction.*

## 2. METHODS

### 2.1. Procedures and Participant

This research was designed as a cross-sectional study. The study population included people aged 65 years and older who stayed at thermal tourism facilities in the Turkish provinces of Samsun, Sivas, Amasya, Afyonkarahisar, and Kütahya from October 15, 2024, to February 28, 2025. Eligibility criteria included the ability to communicate verbally and voluntary participation through informed consent. As access to the entire population was not feasible, the minimum required sample size was determined to be 385 participants based on a 95% confidence level and a 5% margin of error. Data collection was carried out through face-to-face interviews using a non-probability convenience sampling method. To account for potential data loss or incomplete responses, the final sample was increased to 400 individuals.

### 2.2. Measurement

Data were self-reported through a two-part questionnaire completed by the participants. The first part of the questionnaire consisted of ten statements designed to collect socio-demographic information about the participants (age, gender, marital status, etc.). In the second part of the questionnaire, the scales “Dispositional Hope (DHS)”, “Spiritual Well-Being (FACIT-Sp-12)”, “Perception of Health (PHS)”, and “Satisfaction with Life Scale (SWLS)” were administered. Permission to use these scales in the study was obtained by e-mail from the academics who conducted the Turkish validity and reliability study.

### 2.3. The Dispositional Hope Scale (DHS)

The Dispositional Hope Scale (DHS), originally introduced by Snyder et al. (1991), was translated and culturally adapted into Turkish by Tarhan and Bacanlı (2015), who also examined its validity and reliability. The instrument uses an eight-point response format ranging from “1= definitely false” to “8=definitely true”, where higher scores reflect greater levels of hope (Snyder et al., 1991; Tarhan & Bacanlı, 2015). In the initial development study, Cronbach’s alpha coefficient was reported as 0.82. The structural equation modeling (SEM) results further supported the scale’s construct validity, yielding acceptable fit indices: (Gürbüz & Şahin, 2018) ( $\chi^2/df = 3.965$ , RMSEA = 0.061, CFI = 0.93, RNI = 0.92, TLI = 0.94,  $p < 0.01$ ).

### 2.4. Spiritual Well-Being (FACIT-Sp-12)

The scale, originally developed by Peterman, Fitchett, Brady, Hernandez, and Cella (2002), was translated into Turkish and its validity and reliability were confirmed by Aktürk, Erci, and Araz (2017) and Peterman et al. (2002). This instrument contains 12 items rated on a 5-point Likert scale. Each item is scored from 0 to 4, resulting in a total score of 0 to 48. A higher total score indicates greater spiritual well-being. The Turkish adaptation study reported Cronbach’s alpha coefficient of 0.87 (Aktürk et al., 2017). The structural equation modeling (SEM) analysis conducted in this study confirmed the construct validity of the FACIT-Sp-12 scale with acceptable fit indices (Gürbüz & Şahin, 2018) ( $\chi^2/df = 4.549$ , RMSEA = 0.066, CFI = 0.93, RNI = 0.96, TLI = 0.94,  $p < 0.01$ ).

### 2.5. Perception of Health Scale (PHS)

The Health Perception Scale (PHS) was originally developed by Diamond, Becker, Arenson, Chambers, and Rosenthal (2007), and its adaptation to the Turkish language, including validity and reliability analysis, was carried out by Diamond et al. (2007) and Kadioğlu and Yildiz (2012). The PHS contains 15 items measured on a 5-point Likert scale ranging from “1 = Strongly Disagree” to “5 = Strongly Agree.” The total score of the scale ranges from 15 to 75, with higher scores reflecting more positive perceptions of health. The original study reported a Cronbach’s alpha coefficient of 0.84, whereas the reliability coefficient calculated in the present study was 0.86. Based on the structural equation modeling (SEM) analysis conducted in this study, the PHS showed acceptable construct validity (Gürbüz & Şahin, 2018) ( $\chi^2/df = 3.130$ , RMSEA = 0.059, CFI = 0.91, RNI = 0.93, TLI = 0.92,  $p < 0.01$ ).

### 2.6. Satisfaction With Life Scale (SWLS)

The Satisfaction with Life Scale (SWLS), originally developed by Diener, Emmons, Larsen, and Griffin (1985) and later by Dağlı and Baysal (2016), contains five items structured according to a one-factor model (Dağlı & Baysal, 2016; Diener et al., 1985). This instrument uses a 5-point Likert format ranging from 1 = strongly disagree to 5 = strongly agree. The total score varies between 5 and 25, with higher scores reflecting greater life satisfaction. The original study reported a Cronbach alpha coefficient of 0.88, whereas the reliability coefficient calculated in the present study was 0.84. The structural equation modeling (SEM) analysis conducted in this study confirmed the construct validity of the SWLS and revealed acceptable fit indices (Gürbüz & Şahin, 2018) ( $\chi^2/df = 4.701$ , RMSEA = 0.059, CFI = 0.91, RNI = 0.91, TLI = 0.92,  $p < 0.01$ ).

### 2.7. Statistical Analysis

Data analysis was performed using Jamovi version 2.6.17. Initially, the skewness and kurtosis values were assessed, and since the values fell between +1.5 and -1.5, the assumption of a normal distribution was confirmed (Gürbüz & Şahin, 2018). For validity, reliability, and structural equation modeling, the SEM path model in Jamovi 2.6.17 was utilized. Mediation analysis was conducted using Jamovi’s Mediation analysis tool. All analyses were carried out with a 95% confidence level and a 5% margin of error. This study used life satisfaction (SWL) as the dependent variable, dispositional hope and spiritual well-being as the independent variables, and the perception of health as the mediator.

While Structural Equation Modeling (SEM) was employed to confirm the construct validity and reliability of the measurement models (CFA), the hypothesis testing for mediation effects was conducted using a regression-based Generalized Linear Mediation Model (GLM) approach via the jAMM module in Jamovi. This approach utilizes ordinary least squares (OLS) regression and 5,000 bootstrap samples to calculate indirect effects. As this is a regression-based path analysis rather than a covariance-based structural equation model, traditional global fit indices (e.g., RMSEA, CFI, TLI) are not computed or reported for the structural paths.

To avoid the possibility of multicollinearity and accurately separate the different mechanistic pathways for each independent variable, two separate simple mediation models were constructed and tested instead of a single parallel mediation model. For visual clarity and conceptual clarity, the results of these two different models are combined and presented in a single path diagram in the Results section.

## 3. RESULTS

### 3.1. Descriptive Statistics

The mean age of the participants was  $69.2 \pm 3.23$ , and 60.3% were female. 88.2% of the participants were married, and 31.7% received thermal services in Samsun. 66.7% had rheumatic-orthopedic chronic diseases, and 93.5% preferred thermal facilities for health purposes (Table 1).

Table 1. Socio-demographic characteristics of the sample.

Variables		N (400)	%
Age (Min.-Max.65-82)		69.2±3.23	
	65-69	286	71.5
	70-79	98	24.5
	80+	16	4.0
Gender			
	Female	241	60.3
	Male	159	39.7
Education			
	High School and Below	221	55.2
	Above High School	179	44.8
Marital status			
	Married	353	88.2
	Single	47	11.7
Income perception			
	Income less than expenditure	234	58.5
	Income more than expenditure	34	8.5
	Income equals expenditure	132	33.0
Smoking			
	Yes	68	17.0
	No	332	83.0
Do you have any chronic diseases?			
	Yes	400	100
What is your chronic disease? * (816)*			
	Gastrointestinal-Urological	72	8.8
	Rheumatic- Orthopedic	545	66.7
	Eye Diseases	66	8.2
	Dermatological Diseases	133	16.3
Province where the thermal facility is located			
	Samsun	127	31.7
	Afyonkarahisar	96	24.0
	Sivas	74	18.6
	Amasya	56	14.0
	Kutahya	47	11.7
Why did you prefer the thermal facility (SPA)?			
	Vacation (Recreation-entertainment)	21	5.2
	Health	374	93.5
	Leisure time activities	5	1.3

Note: \* indicates that participants could select multiple responses for this question.

### 3.2. Correlation Analysis

Table 2 shows the means, standard deviations, and correlation coefficients of the study variables. The correlation coefficients between constructs remained below the threshold of 0.70, indicating no significant multicollinearity problems. Moreover, a statistically significant correlation of less than 0.70 supports the establishment of discriminant validity (Hair, Hult, Ringle, & Sarstedt, 2022). Pearson correlation analysis was performed to examine the relationships between variables.

The results are shown in Table 2. Results showed a positive and statistically significant relationship between DHS, PHS, FACIT-Sp-12, and SWLS ( $p < 0.001$ ). The strongest association was observed between PHS and DHS ( $r = 0.542$ ,  $p < 0.001$ ), while the weakest association was observed between DHS and SWLS ( $r = 0.380$ ,  $p < 0.001$ ) (Table 2).

Regarding descriptive statistics, the participants' average spiritual well-being score (FACIT-Sp-12) was  $X = 31.7 \pm 4.71$  (out of 48 points). The mean Dispositional Hope Scale score (DHS) was:  $X = 50.00 \pm 7.07$  (out of 64), the mean perception of health scale (PHS) was  $X = 49.4 \pm 5.90$  (out of 75), and the mean life satisfaction score (SWLS) was  $X = 16.3 \pm 4.76$  (out of 25) (Table 2).

Table 2. Scale means and Pearson correlation analysis results.

Variables	Min.-Max.	Mean	SD	Median	DHS	PHS	FACIT	SWLS
Dispositional hope (DHS)	8-64	50.0	7.07	49	1			
Perception of health scale (PHS)	15-75	49.4	5.90	48	0.542*	1		
Spiritual well-Being (FACIT-Sp-12)	0-48	31.7	4.71	31	0.355*	0.537*	1	
Satisfaction with life scale (SWLS)	5-25	16.3	4.76	18	0.380*	0.553*	0.393*	1

Note: p < 0.001 (\*), SD= Standard deviation.

3.3. Mediation Analysis

The study hypotheses were tested through mediation analysis performed in Jamovi 2.6.17 using 95% confidence intervals and 5,000 bootstrap resamples. In bootstrap-based mediation procedures, the research hypothesis is supported if the 95% confidence interval for the indirect effect does not include zero (MacKinnon, Lockwood, & Williams, 2004).

A mediation model was tested to examine whether health perceptions mediated the association between older adults' spiritual well-being, hope, and life satisfaction (Table 3, Figure 2). Indirect effects were assessed using bootstrapping confidence intervals, consistent with modern mediation approaches that do not assume normality (Preacher & Hayes, 2008). The indirect effect was interpreted as statistically significant because the bootstrap confidence intervals for the indirect path ([0.019, 0.104] and [0.027, 0.154]) excluded zero.

Results showed that DHS positively and significantly predicted both PHS ( $\beta = 0.542$ ;  $p < 0.001$ ) and SWLS ( $\beta = 0.295$ ;  $p < 0.001$ ). Additionally, PHS had a positive and significant effect on SWLS ( $\beta = 0.212$ ;  $p < 0.001$ ). Health perception played a partial mediating role in the relationship between DHS and SWLS ( $\beta = 0.115$ ;  $p < 0.001$ ). Therefore, hypotheses H<sub>1</sub>, H<sub>2</sub>, and H<sub>6</sub> were supported (Table 3, Figure 2).

Similarly, FACIT showed a positive and significant effect on PHS ( $\beta = 0.536$ ;  $p < 0.001$ ) and SWLS ( $\beta = 0.245$ ;  $p < 0.001$ ), and PHS also significantly predicted SWLS ( $\beta = 0.079$ ;  $p < 0.05$ ). Health perception partially mediated the association between FACIT and SWLS ( $\beta = 0.042$ ;  $p < 0.05$ ). Mediation shares were calculated to demonstrate the practical extent of these indirect effects. Health perception accounted for approximately 28.0% of the total influence of hope on life satisfaction (0.115/0.410). Similarly, perception accounted for 14.6% of the total effect of spiritual well-being on life satisfaction (0.042/0.287). Based on these results, hypotheses H<sub>3</sub>, H<sub>4</sub>, H<sub>5</sub>, and H<sub>7</sub> were accepted (Table 3, Figure 2).

Table 3. Mediator analysis results.

Mediation paths	Unstandardized estimates				95% C.I. (a)		Standardized estimates		
	Type	Effect	B	SE	Lower	Upper	$\beta$	z	p
Model 1	Indirect	DHS⇒ PHS ⇒ SWLS	0.077	0.0218	0.034	0.119	0.115	3.55	<0.001
	Component	DHS⇒PHS	0.455	0.0353	0.386	0.524	0.542	12.91	<0.001
		PHS⇒ SWLS	0.169	0.0460	0.079	0.259	0.212	3.69	<0.001
	Direct	DHS ⇒ SWLS	0.197	0.0386	0.122	0.273	0.295	5.12	<0.001
Total	DHS⇒SWLS	0.344	0.0330	0.055	0.185	0.410	3.65	<0.001	
Model 2	Indirect	FACIT⇒ PHS ⇒ SWLS	0.042	0.0315	0.019	0.104	0.042	1.36	<0.05
	Component	FACIT⇒PHS	0.676	0.0532	0.573	0.781	0.536	12.72	<0.001
		PHS⇒ SWLS	0.063	0.0462	0.027	0.154	0.079	1.36	<0.05
	Direct	FACIT⇒SWLS	0.247	0.0583	0.133	0.361	0.245	4.24	<0.001
Total	FACIT⇒SWLS	0.289	0.0494	0.108	0.301	0.287	4.14	<0.001	

Note: Unstandardized Estimates,  $\beta$  = Standardized Estimates. Confidence intervals computed with method: Bias-corrected percentile bootstrap (5,000 samples). Betas are completely standardized effect sizes.

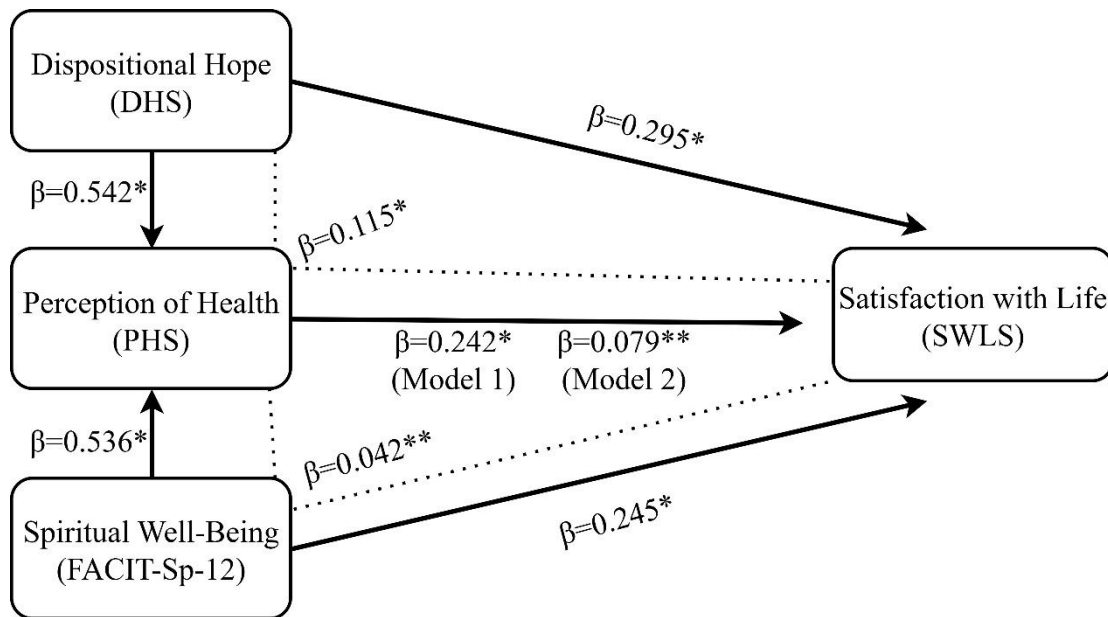


Figure 2. Final model.

Note: \* $p<0.001$ ; \*\* $p<0.05$ .

Since two separate mediation analyses were conducted, the path coefficients from Perception of Health (PHS) to Satisfaction with Life (SWLS) differ depending on the independent variable used (Model 1: DHS,  $\beta=0.212$ ; Model 2: FACIT-Sp-12,  $\beta=0.079$ ). The figure integrates results from both models for visual clarity.

#### 4. DISCUSSION

The results of this study, which is the first to examine the mediating role of health perceptions in the effect of hope and spiritual well-being on life satisfaction among individuals aged 65 and over receiving thermal tourism services in Türkiye, are discussed in light of the literature.

In the study, it was found that the level of hope of older adults receiving thermal tourism services was at a high level with  $50.0 \pm 7.07$  out of 64 points. In the study conducted by Bahcecioglu et al. (2024) on haematological cancer patients aged 65 and over, the level of hope was found to be at a moderate level with a  $40.42 \pm 8.29$  score points (Bahcecioglu et al., 2024). A study conducted in Türkiye by Beşikçi (2023) found that the level of hope among older adults was low (Beşikçi, 2023). In a study conducted in Türkiye by Özkan, Korkmaz, and Turan (2025) with older adults who received services from day care centres for the elderly and those who did not, it was found that the level of hope of those who received services was  $51.1 \pm 6.5$  and the level of hope of those who did not was  $41.0 \pm 8.6$  (Özkan et al., 2025). In a study of older adults in Iran by Pahlevan et al. (2021), the level of hope was found to be  $40.2 \pm 6.3$  (Pahlevan et al., 2021). According to the results of this study and previous studies, the hope levels of older adults who have social interaction, participate in social activities, and receive social support are higher than those who do not participate in such activities. Again, although in previous studies the hope level of older adults with chronic diseases was found to be at a medium level, according to the results of this study, it can be said that the hope level of older adults who participate in activities such as thermal tourism services increases. Therefore, it can be stated that both individuals and policymakers are encouraged to plan activities that contribute to the socialization of older adults and to overcome loneliness by taking these results into consideration.

In the study, it was determined that the spiritual well-being level of older adults receiving thermal tourism services was high, with  $31.7 \pm 4.71$  out of 48 points. While the level of spiritual well-being was found to be high in studies conducted with elderly individuals with chronic diseases (Bahcecioglu et al., 2024; Kavak, Özdemir, & Dural, 2021; Özdemir, Kavak Buda, Dural, & Gültekin, 2023), the level of spiritual well-being was found to be moderate in older adults with some cancer diseases (Cheng et al., 2019; Sajadi et al., 2018). Previous studies in the literature show that the economic, health, and social problems of individuals increase with age. Life events such as the loss of a spouse or close friend, the retirement process, and the redefinition of roles are found to increase stress levels in older adults;

this situation paves the way for the emergence of mental health problems such as depression and anxiety. It is emphasized that religious and spiritual orientations offer an important coping mechanism in dealing with such difficulties. In fact, spirituality can both support the successful aging process of older adults and positively influence their ability to cope with serious illnesses and injuries and the course of these illnesses (Gürsu, 2018; Long et al., 2024).

The study found that the health perception of the participants was high at  $49.4 \pm 5.90$  out of 75 points, and 93.5% of the participants visited thermal spas for health purposes. In a study conducted by Han, Kim, and Kim (2021) on older adults, it was found that the health perception of those who participated in moderate and vigorous leisure-time walking was higher than that of other older adults (Han et al., 2021). Participation in tourism and leisure activities was also found to improve the health perceptions of older adults and contribute to healthy aging, according to Zhang, Zhang, and Xu (2021) and Patterson, Balderas-Cejudo, and Pegg (2021). In a study of older adults visiting thermal spas in Sivas, one of the main thermal centres in Türkiye, it was found that 36.2% of participants visited thermal spas for health reasons and stayed for an average of 5 days (Özgün, Biçer, & Yurcu, 2019). Studies conducted with a different sample group visiting thermal spas in Estonia and Finland reported positive changes in people's health perceptions and healthy lifestyle behaviours after thermal tourism, and that making these visits a routine made the participants feel better (Koskinen, 2019; Koskinen & Wilska, 2019). Previous studies and the results of this study show that both older adults and individuals in other age groups prefer thermal facilities more for health, and thermal spas make a positive contribution to developing healthy living behaviors and improving health perception.

In the study, the life satisfaction of older adults was found to be at a moderate level of  $16.3 \pm 4.76$  out of 25 points. Life satisfaction, which is an indicator of healthy ageing, involves the individual's own views and is a subjective evaluation of one's own life (Şahin, Özer, & Yanardağ, 2019). Life evaluation is one of the indicators of successful ageing. It is also an indicator of health and physical functioning (Özdemir et al., 2023). Kandapan, Pradhan, and Pradhan (2023) conducted a study of older adults in India and found that those who had poor health, poor economic status and lived alone had lower life satisfaction than those who lived with a spouse, had good health and good economic status (Kandapan et al., 2023). The study by Roh and Weon (2022) in Korea found that those who participated in social activities, maintained social relationships and had a high perception of health had high life satisfaction (Roh & Weon, 2022). In the study conducted by Bahcecioglu et al. (2024) in Türkiye, the life satisfaction score was  $16.24 \pm 8.79$  (Bahcecioglu et al., 2024), and in the study conducted by Şahin et al. (2019), life satisfaction was found to be at a moderate level (Şahin et al., 2019). Başçillar and Karakaya (2025) found that life satisfaction was associated with economic status and being involved in daily physical activity (Başçillar & Karakaya, 2025). The results of our study are similar to those found in the literature. Although the older adults who participated in our study have high perceptions of hope, spirituality, and health, the lack of a good income and having more than one chronic disease may have caused low life satisfaction. Because tourism activities in Türkiye are very expensive.

The study found a positive and significant relationship between hope, spiritual well-being, health perception, and life satisfaction. Previous studies have also determined that spiritual well-being, hope, and health perception have a high positive relationship with life satisfaction (Bahcecioglu et al., 2024; Başçillar & Karakaya, 2025; Özdemir et al., 2023; Özkan et al., 2025). These results highlight the importance of psychosocial variables in understanding the multidimensional construct of life satisfaction, and in particular emphasize hope, spiritual well-being, and health perceptions as key determinants of this construct. However, the cross-sectional nature of the study poses limitations in determining the direction and causality of relationships between variables. Therefore, further longitudinal studies incorporating causal analyses are needed to support the current findings.

The study's findings indicate that hope, spiritual well-being, and health perception serve as critical determinants of life satisfaction. The study further suggests that health perception plays a mediating role in the relationship between hope and spiritual well-being, influencing life satisfaction. As posited by Özdemir et al. (2023), fostering hope and spiritual well-being in older adults has the potential to facilitate a quality aging process by enhancing their quality

of life (Özdemir et al., 2023). Long et al. (2020) have indicated that an increase in hope has significant effects on the physical, psychological, and social well-being of the aging adult population (Long et al., 2020). Lee and Salman (2018), Pahlevan et al. (2021), and Bahcecioglu et al. (2024) have indicated that older adults with higher levels of spirituality attribute more meaning to their lives, leading to increased life satisfaction. It was also noted that spiritual well-being enables older adults to make sense of stressful life changes, such as physical decline-related losses, and evaluate these situations in a more functional manner (Bahcecioglu et al., 2024; Lee & Salman, 2018; Pahlevan et al., 2021). A multitude of studies have been conducted by Dumitrache, Rubio, and Rubio-Herrera (2017); Kim et al. (2021), and Khodabakhsh (2022) that have determined health perception to be one of the determinants of life satisfaction (Dumitrache et al., 2017; Khodabakhsh, 2022; Kim et al., 2021). Chantakeeree, Sormunen, Estola, Jullamate, and Turunen (2022) have stated that positive health perception increases life satisfaction in a positive direction (Chantakeeree et al., 2022). Concurrently, Long et al. (2020) discovered that positive health perception and psychological well-being enhance life satisfaction levels (Long et al., 2020). Despite the fact that this study and previous studies were conducted on different groups, the results are analogous. However, to evaluate the effects of the examined variables on life satisfaction more comprehensively, including other psychosocial variables such as social support, loneliness, self-esteem, and stress levels in the model could increase the depth of the analysis. Moreover, the investigation into the partial mediating role of health perception in the relationship between hope, spiritual well-being, and life satisfaction was conducted exclusively at a statistical level. The contextual and theoretical dimensions of this mediation were not addressed. This situation necessitates further inquiry into the mechanisms through which health perception functions in terms of cognitive and emotional processes that contribute to an individual's life satisfaction. It is imperative that future research support this relationship by employing qualitative methods, thereby facilitating a more comprehensive understanding of the dynamics between variables.

In the literature review, no comprehensive study was found that simultaneously addressed hope, spiritual well-being, health perception, and life satisfaction in older adults. Spiritual well-being and hope encompass both individuals' religious orientations and their search for existential meaning. Within the Turkish cultural structure, it has been observed that as individuals age, their religious tendencies strengthen, they assign deeper meaning to their lives, and the positive relationships they establish with their social environment support their levels of spiritual well-being and hope. During this process, it is seen that individuals' perceptions of their own health are shaped in a positive direction and that this perception supports both their psychological and physical well-being. Therefore, it can be stated that older individuals' more functional lives in religious, spiritual, physical, and social dimensions can increase their life satisfaction at a meaningful level through their perception of health.

#### *4.1. Limitations of the Study*

Although this study is original research examining the relationships between hope, spiritual well-being, health perception, and life satisfaction in elderly individuals in the context of thermal tourism, it contains some limitations. First, the study was conducted using a cross-sectional design, which limits the ability to determine the direction of causal relationships between variables. Therefore, it is recommended that prospective longitudinal studies be conducted to analyze the causal processes between variables more effectively. Second, the sample was limited to elderly individuals who benefited from thermal tourism services and was selected using convenience sampling. This limits the generalizability of the findings and reduces the capacity to represent elderly individuals with different socioeconomic levels, cultural structures, or age groups. Third, the study used only self-report scales. This may limit the objectivity of the data, as participants' responses may be subject to cognitive biases such as social desirability bias or personal perception differences. Fourth, the study did not include a control group of older adults who do not participate in thermal tourism. The absence of a control group makes it difficult to attribute the observed high levels of hope and spiritual well-being solely to the thermal tourism experience. Fifth, data collection was limited to the winter season (October to February). Seasonal variations can affect participants' profiles and psychological states.

Therefore, results may be different for summer visitors. Finally, a significant majority of participants (66.7%) reported having a rheumatic or orthopedic chronic disease. Consequently, the results may be more representative of older adults seeking physical therapy and pain relief than the general older population.

#### *4.2. Theoretical Implications*

This study makes an important contribution to the literature by using a holistic approach to investigate the influence of hope, psychological well-being, and health perceptions on life satisfaction in older adults.

The results indicate that health perceptions play a partially mediating role in the effects of hope and spiritual well-being on life satisfaction. This finding highlights that life satisfaction is shaped not only by external conditions but also by individuals' internal spiritual resources and perceptions of their health. Thus, by integrating health perceptions into an aging-related life satisfaction model, this study presents a new theoretical framework to explain the interaction between psychological, spiritual, and perceptual resources of older adults, especially in the context of thermal tourism. Future studies testing this model using different samples and longitudinal designs will provide a deeper understanding of the multilevel factors that influence quality of life in older adults.

#### *4.3. Practical Implications*

The results of this study provide important practical recommendations for developing clinical and social interventions to improve life satisfaction in older adults. Because health perception is an important mechanism that transforms hope and spirituality into life satisfaction, thermal facilities need to evolve from purely medical treatment centers to holistic wellness environments. This requires concrete improvements in the design of tourism services.

First, when developing programs, thermal facilities should integrate psychological and spiritual support into their core services. Combining traditional physical therapy with mindfulness sessions, spiritual counseling, or psychoeducational programs that promote hope can directly target the psychosocial mediators identified in this study. Second, staff training is paramount. Medical professionals, physical therapists, and hotel staff involved in thermal tourism should be trained to use positive and empowering language that enhances older guests' subjective perceptions of health and shifts the focus of services from "management of chronic disease" to "promotion of overall well-being and independence."

Third, thermal tourism marketing messages need to be redesigned. Marketing strategies should directly address the multidimensional psychological needs of aging populations, emphasizing overall health, spiritual rejuvenation, and restoration of hope, rather than simply promoting the physical relief of joint pain with thermal waters.

From a public health policy perspective, physical care services need to be integrated with psychosocial and spiritual support programs and incorporated into service plans for older people. Considering that thermal tourism centers provide not only physical recovery but also social interaction and psychological relaxation, it is recommended to support these centers within the framework of public health applications. Developing publicly funded social tourism policies that allow economically disadvantaged older people to benefit from such services will promote healthy and successful aging.

## **5. CONCLUSION**

The study found that older adults receiving thermal tourism services had high levels of hope, spiritual well-being, and health perception, alongside moderate levels of life satisfaction. Most importantly, this research uncovers a novel mechanistic insight: the positive impacts of hope and spiritual well-being on life satisfaction are fundamentally bridged by an individual's subjective health perception. This indicates that internal psychological and spiritual resources are most effective in improving quality of life when they successfully enhance how older adults actively perceive their own physical capabilities. Due to the rapid aging of the world's population, societies need to develop new policies that encourage individuals to develop healthy lifestyles to prevent social and economic difficulties. To increase the life

satisfaction of older adults, it should be ensured that these individuals participate in tourism activities, social support and socialization projects, and individuals who are economically inadequate should be supported to lead a more productive life. Finally, it is recommended that studies on older adults be conducted with different variables and different sample groups.

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**Transparency:** The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

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