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## Women's successful aging

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### ABSTRACT

The authors investigated women's successful aging in the context of well-being and satisfaction with life. This study was conducted with 129 women in Women's Rest Homes in the province of Adana, Turkey. It was found that satisfaction with life (SL) was significantly associated with successful aging (SAS) ( $\beta = .350$ ;  $p = .005$ ;  $t = 2.833$ ), and SAS ( $\beta = .358$ ;  $p = .008$ ;  $t = 2.632$ ) and SL ( $\beta = .669$ ;  $p \leq 0.001$ ;  $t = 4.774$ ) were significantly associated with women's well-being (WBI). Women in the 60–66 age range had significantly higher SAS ( $md = 1.30314$ ;  $p = .004$ ) and struggle against difficulties (SAD) ( $md = 1.35624$ ;  $p = .005$ ) than those in the 81–87 age range, and women with bachelor's degrees had significantly higher SAD ( $md = .73590$ ;  $p = .001$ ) than women with primary school education. Women who had high monthly incomes ( $md = 1.75741$ ;  $p = .000$ ) were more satisfied with life than women with moderate incomes ( $md = .87905$ ;  $p = .000$ ), who were in turn more satisfied with life than women with low incomes ( $md = -.87905$ ;  $p = .000$ ). Women with high monthly incomes ( $md = 1.34606$ ;  $p = .005$ ) had higher well-being than women with moderate incomes ( $md = .70101$ ;  $p = .005$ ), who in turn had higher well-being than women with low incomes ( $md = -.70101$ ;  $p = .005$ ). The validity and reliability of the SAS [ $\chi^2(27) = 67.088$ ,  $p < .01$ ;  $\chi^2/df = 2.033$ ; SRMR: .090; RMSEA: .080; NNFI: .905; IFI: .932; CFI: .930; GFI: .911; AGFI: .851] were verified in this study. It was determined that satisfaction with life and well-being were crucial determinants of women's successful aging.

### ARTICLE HISTORY

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Aging is an international and interdisciplinary issue that varies from culture to culture. Aging affecting the physical, mental, social, and psychological states of individuals negatively affects their quality of life, life satisfaction, and well-being. It has been shown that aging is affected by health (Rowe & Kahn, 1987), social (Clarke, Evandrou, & Warr, 2005; Walker, 2005), technological (Donoghue, Graham, Gibbs, Lewis, & Blay, 2003), and psychological factors (Hill, 2011). It is possible to address these

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common problems of the elderly in different cultures and geographies through interdisciplinary studies. The influence of cultural and geographical differences on lifestyles determines the problems experienced in old age in different ways, of which one of the most important areas of research is women's health issues. Aging-related declines affect women's physical and mental health through the effects of lifestyle and cultural differences and socio-psychological challenges. Maternity, work-family role conflicts, and social pressure impact the aging of women all over the world. Therefore, it is necessary to conduct international and interdisciplinary studies of the perception and processes of aging in women who have different physical and biological features and needs in the life cycle. Women's health and aging are important topics in many fields, such as medical, social work, sociology, psychology, public health, health education, and business and entrepreneurship.

A relative increase of the population of elderly women compared to men was determined by a U.S. Census Bureau Report in 2016, such that for every 10 men 65 and older, there were 12.6 women the same age. In 2017, there were 8.91 million women aged 65 and older, while the corresponding male population was 7.93 million (The Population Reference Bureau, 2018). There were thus approximately 16% more women in 2017. The population 65 and older increased globally from 5% in 1960 to 9% of the world population of 7.6 billion in 2018 and is forecast to rise to 16% by 2050. This increase is due to developments in medicine and technology (Powell & Biggs, 2000) that remain in the forefront of media attention, while issues related to aging tend to appear in the background (Conway, 2018). Therefore, aging studies increasingly continue to remain on the agenda.

Successful aging is one of the most important and multidisciplinary research topics in aging. This term refers to avoidance of disease, high physical and mental functioning, active participation in life, absence of disease in the biomedical sense, psychological well-being, life satisfaction, financial security, and a positive view of life (Bowling & Dieppe, 2005). Araújo, Ribeiro, Teixeira & Paúl (2016) clarified successful aging as a state of physiological, cognitive, and social well-being.

Successful aging is termed positive aging in the literature, as successful aging depends on positive behavior patterns. According to Hill (2011), the characteristics of positive aging consist of the ability to mobilize hidden or undiscovered powers, flexibility in behavior, a decision-making style that supports individual well-being, and an optimistic view of age-related decline (Hill & Mansour, 2008). Hsu (2015) indicated that successful aging includes an ability to deal with physical function difficulties (Katz, Ford, Moskowitz, Jackson, & Jaffee, 1963) and depressive symptoms (Kohout,

Berkman, Evans, & Huntley, 1993), maintenance of cognitive function (Pfeiffer, 1975), social support, productive activity, economic satisfaction, and satisfaction with life (Neugarten, Havighurst, & Tobin, 1961). It has been shown that engagement with life (Rowe & Kahn, 1987), optimization, compensation (Baltes & Baltes, 1990), primary and secondary control (Schulz & Heckhausen, 1996), and psychological well-being (Ryff, 1989) constitute components of the successful aging construct.

Individuals can mobilize their resources to prevent declines due to aging (e.g., sarcopenia, dotage) in the aging process (Slagle, 2011). Mobilization of resources is possible with individual acceptance, which is effective in revealing psychological intentions. Individuals who accept aging or the use of products develop their behavior positively and are satisfied with their life (Hill, 2011). Factors such as hedonic motivation, satisfaction with life, social participation, social interaction, and autonomy in the aging process all have effects on successful aging. Social aspects such as activeness, self-esteem, and achievement of individual goals in the aging process are effective in successful aging and provide the elderly with life satisfaction (Havighurst, Neugarten, & Tobin, 1968). Factors related to the personal situation in the retirement span, such as neighborhood relations, financial problems, social opportunities, and productivity, affect successful aging and satisfaction with life (Bowling & Dieppe, 2005). All of these factors are associated with well-being, satisfaction with life, and successful aging (Blanco-Molina, Pinazo, & Tomas, 2019; Cho, Martin, & Poon, 2015; Díaz-López et al., 2017; Fagerström & Aartsen, 2013; Hsu, 2010; Mallari, 2011; Strawbridge, Wallhagen, & Cohen, 2002; Varsney, 2007). In this context, the main purpose of this research is to examine the factors of life satisfaction assumed to be effective in the effects of successful aging on well-being status. The lack of earlier studies in which these three factors are considered together is the main strength of this study. Currently, increasing violence and discrimination against women gradually decreases their quality of life, especially in developing countries. The reason why this study was carried out with women is to raise awareness of what is needed for women to live humanely and to raise public awareness in this direction.

The aim of this study is to investigate and raise awareness of women's successful aging by researching the association between satisfaction with life and well-being. Furthermore, this study is intended to explore why and how this context matters under the conditions in which diverse groups of women may experience similar health issues regarding successful aging in order to make a theoretical, methodological, and political contribution to their lives. The findings of the assessment of women's health and aging concern all women and disciplines globally. Our recommendations and findings may have practical benefits in societies with similar socio-

demographic characteristics, and can provide important insights regarding the physical, social, psychological, and health issues of aging and women's health for future researchers in different disciplines that can be addressed by international organizations so that necessary steps can be taken to improve the current position of women. Thus, international principles of women's health and aging can be developed and adopted by many countries to ensure the better health of women in fair and favorable conditions. In this study, an international and interdisciplinary audience of practicing nurses will be able to gain knowledge of the antecedents of women's successful aging, the relationships between satisfaction with life and well-being, and the applicability of a successful aging scale in various disciplines.

### **The current study**

Three goals were adopted in this study of assessing women's successful aging, well-being, and satisfaction with life and of determining the association between these variables, for which purpose the literature was reviewed. Some noteworthy studies are mentioned below.

Successful aging comprises a level of life satisfaction appropriate to the respective stage in the life cycle, a lack of disability, longevity, independence, and active participation in life (Moody, 2005). Approaches to successful aging have been investigated by researchers in various disciplines. According to their studies, disease (Rowe & Kahn, 1987), sarcopenia (Doherty, 2003), declines in daily activities (Guadalupe-Grau et al., 2017; Joung & Miller, 2007), decrease in social relations (Carstensen & Lang, 1997; Clarke et al., 2005; Walker, 2005; Wilkie, Tajar, & McBeth, 2013), psychological decline (Hill, 2011; Hill & Mansour, 2008), gender and ethnicity inequalities (Hooyman & Kiyak, 2011), subjective well-being decline (Ryff & Singer, 1998), mental decline (Diener, Oishi, & Lucas, 2003), environmental factors (Gabriel & Bowling, 2004; Rubinstein, Kilbride, & Nagy, 1992), and individual beliefs (Gabriel & Bowling, 2004; Smith & Gersdorf, 2004) negatively affect the successful aging of the individual. It has been determined by these studies that as individuals' income increases, the levels of pleasure and happiness they receive from life increase (Lipovcan, Brkljacic, & Sakic, 2007); physical health problems constitute a significant obstacle in the relationships of individuals with friends and family (Stolar, MacEntee, & Hill, 1992); loneliness and depression are negatively correlated with life satisfaction (Swami et al., 2007); decreases in social support reduce life satisfaction (Blazer, Hughes, & George, 1992; Newsom & Schulz, 1996); and the elderly living in "empty nests" suffer mental problems and decreases in life satisfaction (Liu & Guo, 2008).

Hill (2011) emphasized the basic characteristics of positive aging as the ability to mobilize one's ability to cope with hidden or undiscovered difficulties, flexibility in thought and behavior, optimistic viewpoints on regression issues, and decisions that confirm personal well-being. The physical disabilities of aging may cause social decline, and the mobilization of resources affects individual well-being so as to prevent this decline (Slagle, 2011). Successful aging provides subjective well-being in the physiological, mental, and social aspects of satisfaction with life and well-being (Baltes & Carstensen, 1996). Emerging medical and social opportunities affect the subjective well-being and successful aging of the elderly. These studies have demonstrated an association between well-being, satisfaction with life, and successful aging. Therefore, it was postulated that satisfaction with life would be significantly associated with women's successful aging (Hypothesis 1), women's successful aging would be significantly associated with their well-being (Hypothesis 2), and their satisfaction with life would be significantly associated with their well-being (Hypothesis 3).

Successful aging theory was used to provide a context for the study and the hypotheses. Successful aging is defined as positive aging, active aging, and effective aging in the literature (Glass, 2003; Poon, Gueldner, & Sprouse, 2003). This theory posits the power and state of individuals to cope with disease and weakness in the aging process (Rowe & Kahn, 1997), high cognitive and physical functioning, commitment to life, optimism, positive thinking (Baltes & Baltes, 1990), mental strength (Schulz & Heckhausen, 1996), and psychological well-being (Ryff, 1989) as comprising successful aging. This psychological, physical and cognitive state enables the individual to age successfully based on the assumption that health and perception are effective in successful aging. Successful aging is a gerontological concept (Wykle, Whitehouse, & Morris, 2005) relevant to life satisfaction in the life cycle, lack of disability, longevity, independence, and active participation in life (Moody, 2005), and is a subject of multidisciplinary research on issues such as mental health, social life, and psychology (Phelan & Larson, 2002). A number of model studies were used to measure the successful aging of individuals (Hsu, 2015; Kohout et al., 1993; Parslow, Lewis, & Nay, 2011; Rowe & Kahn, 1997; Wilkie et al., 2013). Reker (2009) developed a scale to measure successful aging using 14 items pertaining to the three underlying dimensions of healthy lifestyle habits, adaptive coping, and engagement with life.

The successful aging scale was not used in studies in which subjective well-being was associated with successful aging (Blanco-Molina et al., 2019; Díaz-López et al., 2017; Strawbridge et al., 2002). Strawbridge et al. (2002) measured self-rated successful aging by asking elderly people a single question: "How strongly do you agree or disagree with the statement 'I am

aging successfully (or aging well)?" Cho et al. (2015) determined the association between subjective well-being and successful aging by associating physical functioning, physical health impairment, cognitive functioning, social resources, education, perceived economic status, and past life experiences. Fagerström and Aartsen (2013) clarified the association between subjective well-being and successful aging through the associations of personal growth and spirituality, cognitive functioning, activities, independence, adjustment and coping, well-being and life satisfaction, social relations, financial well-being and positive attitude, and health and physical functioning. On the other hand, some studies of the association between satisfaction with life and successful aging are either qualitative (Fisher, 1992, 1995) or model studies (Hsu, 2010; Mallari, 2011; Varsney, 2007). For instance, Wolosk and Wruble et al. (2010) researched the association between successful aging and satisfaction with life using scales for low-probability disease and disability. However, none of these studies was performed with a validated and reliable successful aging scale.

### **Sample and procedures**

Women's Rest Homes, places where women spend their leisure time, in the province of Adana in Turkey were selected for sample recruitment, since it was not possible to reach all older women there. Participants ( $N=129$ ) were recruited from Women's Rest Homes in Çukurova District, Adana Province, Turkey, in 2019. Participants had to fulfill the following eligibility criteria: (a) female; and (b) 60 and over years old. The Republic of Turkey Ministry of the Interior Governorship of Adana Province approved this study procedures. Informed consent was provided by each participant before applying the survey. Surveys were administered in Turkish by two interviewers in 2019. Due to the fact that it is the home to individuals with different cultures between Asia and Europe, Turkey and more specifically the province of Adana was chosen as the research district. A simple random sampling method was applied to select the sample from Women's Rest Homes. In these homes, elderly people can talk with their friends and meet new women. Potential participants were invited to voluntarily participate in the survey, which was not conducted with individuals who did not wish to participate.

### **Survey measures**

Successful aging of women was assessed using the 14-item scale developed by Reker (2009), as discussed above. The validity and reliability of this scale was analyzed by Hazer and Özsungur (2017) in a study of 510 (151 women and 359 men) Turkish participants. Adaptive coping and engagement with

life factors were combined to create a new secondary factor structure labeled SAD, “struggle against difficulties,” based on this study’s findings. Four items were discarded due to lack of significant contribution to the Common Explanatory Variance (CEV) criterion of .500, and the final scale comprises 10 items and two factors. Items, scales, and model fit indices are presented in Appendix A, [Table A1](#). Successful aging of women was assessed using 10 items taken from the Turkish Version of the Successful Aging Scale (SAS) (Hazer & Özsungur, 2017). Participants responded to these items on a 7-point Likert scale, where 1 = *strongly disagree* and 7 = *strongly agree*. The “healthy lifestyle habits” (HLH) and “struggle against difficulties” (SAD) dimensions comprise three and seven items, respectively. Items were averaged to create a total successful aging score.

Women’s well-being level was assessed using five items taken from the World Health Organization Well-Being Index (WBI) to measure the self-reported mental well-being of the elderly women. Participants responded to these items on a 6-point Likert scale, where 1 = *at no time* and 6 = *all the time* (WHO, 1998).

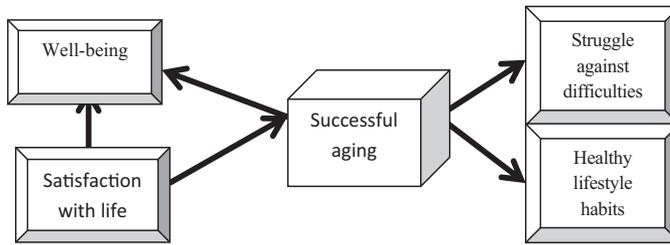
Satisfaction with life was assessed using five items taken from the Satisfaction with Life Scale (SLS) (Diener, Emmons, Larsen, & Griffin, 1985). The cognitive judgment of the participant’s life satisfaction was measured with this scale. Participants responded to these items on a 7-point Likert scale, where 1 = *strongly disagree* and 7 = *strongly agree*.

Finally, sociodemographic variables were included: Age, marital status, educational status, employment status, monthly income, and self-reported disease. The research model is shown in [Figure 1](#).

The scales were placed in separate tables in the survey, and the scales of the dependent variables were arranged after the scales of the independent variables to avoid common method variance (Podsakoff & Organ, 1986).

## Analysis

We characterized the sample population with descriptive analyses using IBM SPSS Statistics 22 and AMOS. The validity and reliability of the measurement tools were measured by confirmatory factor analysis, for which we determined the model fit values by analyzing the predicted model revealed by AMOS (Gefen, Straub, & Boudreau, 2000; Hu & Bentler, 1999) and calculating the values of  $\chi^2$ ,  $\chi^2/df$ , RMSEA, SRMR, GFI, AGFI, CFI, IFI, and NNFI (TLI). The association between women’s well-being level (WBI), satisfaction with life (SL), successful aging of women (SAS), healthy lifestyle habits (HLH), and struggle against difficulties (SAD) were calculated with structural equation modeling (SEM). The validity and reliability of the SAS



**Figure 1.** Research model.

model was analyzed with AMOS. Missing data ( $n = 19$ ) were removed from the data set for a final sample of 129 participants.

## Results

### *Confirmatory factor analysis*

Confirmatory factor analysis (CFA) was used to examine the construct validity of the scales (Byrne, 2013). Confirmatory factor analysis is a type of analysis that tries to show that a latent variable is measured by the observed variables. For covariance-based analyses, validity and reliability analysis should be performed as a prerequisite. If the value of Cronbach's  $\alpha$  is greater than 0.70, it is considered to be consistent (Tavakol & Dennick, 2011). It was demonstrated that SAS, SL, and WBI had satisfactory internal consistency (Cronbach's  $\alpha =$  HLH  $\alpha$ : .856; SAD  $\alpha$ : .801; SAS: .862; SL: .829; WBI: .802). For the SAS model, all subscales were analyzed with confirmatory factor analysis using AMOS. As shown in Table 1, the model fit values varied between the criteria for good and acceptable. The model fit values were measured as  $\chi^2 = 234.615$ ,  $\chi^2/df = 1.629$ , RMSEA = .070, SRMR = .010, GFI = .850, AGFI = .800, CFI = .913, IFI = .915, and NNFI (TLI) = .896.

The factor loadings of the scales were in the range of 0.7 to 0.9. Tabachnick and Fidell (2007) state that the threshold values of factor loadings change depending on the sample size, and in large samples a factor loading value of .300 might be sufficient to define a latent variable. Thus, the related items could measure the scales without any error. Furthermore, the average variance extracted (AVE) values were WBI = 0.529, SL = 0.552, and SAS = 0.825. According to Hu and Bentler (1999), AVE values greater than 0.5 indicate convergence validity. Thus, the observed items had convergent and discriminant validity on the research scales (Table 2).

All the latent variables in the scales of the study were examined with confirmatory factor analysis. A single-factor structure was then analyzed and the obtained  $\chi^2$  values were compared with each other and significant differences examined to test for common method bias (MacKenzie &

**Table 1.** Women's successful aging model fit values.

Fit index	SAS model fit values	Model fit values	One factor model values	Model fit criteria	References
$\chi^2$	67.088; $p=.000$	234.615; $p=.000$	631.241; $p=.000$ ; $\Delta\chi^2=396.626$	Low $\chi^2$ value and $p < .01$ ; $p > .05$	Hooper, Coughlan, and Mullen (2008)
$\chi^2/df$	2.033	1.629	4.153	$\chi^2/df < 3$	Wheaton, Muthen, Alwin, and Summers (1977), Kline (2006), Tabachnick and Fidell (2007)
RMSEA	.080	.070	.157	$\chi^2/df < 2$	Hu and Bentler (1999) Steiger (2007)
SRMR	.090	.010	.535	RMSEA < .05–Good RMSEA < .08–Acceptable .00 ≤ SRMR < .05 Good .05 ≤ SRMR ≤ .10 Acceptable SRMR < .08	Byrne (1998) Diamantopoulos and Siguaw (2000), Hu and Bentler (1999)
GFI	.911	.850	.569	.95 ≤ GFI ≤ 1 Good .90 ≤ GFI < .95 Acceptable	Tabachnick and Fidell (2007), Miles and Shevlin (2007)
AGFI	.851	.800	.461	.90 ≤ AGFI ≤ 1.00 Good .85 ≤ AGFI < .90 Acceptable	Tabachnick and Fidell (2007)
CFI	.930	.913	.538	.95 ≤ CFI ≤ 1.00 Good .90 ≤ CFI < .95 Acceptable	Hu and Bentler (1999) Schumacker and Lomax (1996)
IFI	.932	.915	.546	.95 ≤ IFI ≤ 1.00 Good .90 ≤ IFI < .95 Acceptable	Miles and Shevlin (2007)
NNFI (TLI)	.905	.896	.480	.97 ≤ NNFI ≤ 1 Good NNFI > 0.90 Acceptable	Hu and Bentler (1999), Fan, Thompson, and Wang (1999), Bentler and Bonett (1980)

Note: WB15 item was discarded due to not meeting the criteria of standard deviations (SD < 0.5).

**Table 2.** Convergent and discriminant validity of the model.

	$\alpha$	CR	AVE	MSV	Mar(H)	WBI	SL	SAS
WBI	0.802	0.815	0.529	0.331	0.841	0.727 <sup>a</sup>		
SL	0.829	0.858	0.552	0.331	0.877	0.575*	0.743 <sup>a</sup>	
SAS	0.862	0.899	0.825	0.213	1.235	0.462*	0.276*	0.908 <sup>a</sup>

$\alpha$  = Cronbach's alpha; CR = composite reliability; AVE = average variance extracted; MSV = maximum shared variance; MaxR(H) = maximum reliability; <sup>a</sup>Square root of AVE value; \*Pearson Correlation; AVE is significant over the 0.50 level, the acceptable value of CR is 0.7 and above.

Podsakoff, 2012). The model was tested as a one-factor model, and the model fit coefficients produced by the two models (initial and modified model) are given in Table 1. In order to determine whether there was a significant difference between the one-factor model and the three-factor model, the  $\chi^2$  values were tested and the difference was significant ( $\Delta\chi^2 = 396.626$ ;  $p < .01$ ), indicating no common method bias (MacKenzie & Podsakoff, 2012).

### Descriptive data

Table 3 shows the demographic variable statistics with error of mean, standard deviation, variance, and range, minimum, and maximum. The findings for age (SE: .074; SD: .843;  $\sigma^2$ : .710; R: 3; Min: 1; Max: 4), marital status (SE: .086; SD: .975;  $\sigma^2$ : .950; R: 3; Min: 1; Max: 4), educational status (SE: .107; SD: 1.219;  $\sigma^2$ : 1.486; R: 3; Min: 1; Max: 4), employment status (SE: .064; SD: .726;  $\sigma^2$ : .528; R: 3; Min: 1; Max: 4), monthly income (SE: .053; SD: .597;  $\sigma^2$ : .356; R: 2; Min: 1; Max: 3), and modes of living (SE: .104; SD: 1.180;  $\sigma^2$ : 1.392; R: 5; Min: 0; Max: 5) are shown in Table 3.

Descriptive data of the socio-demographic variables are presented in Table 4. The most common age range was 60–66 ( $n = 53$ ; 41.1%), and the least common was 81–87 ( $n = 6$ ; 4.7%). By occupation, 75 of the participants (58.1%) were retired, and one (0.8%) was employed part time. 54.3% of the participants ( $n = 70$ ) were married and 8% were single ( $n = 1$ ). The most and least common of the other demographic categories are as follows: Primary school graduate (*high*:  $n = 59$ ; 45.7%), secondary school graduate (*low*:  $n = 20$ ; 15.5%); modes of living: With partner (*high*:  $n = 47$ ; 36.4%), with friend (*low*:  $n = 3$ ; 2.3%); moderate monthly income (*high*:  $n = 67$ ; 51.9%), high monthly income (*low*:  $n = 8$ ; 6.2%).

According to the women's self-reported disease findings, 34.9% of the women reported themselves disease-free ( $n = 45$ ), and of the remainder, 21.7% had high blood pressure ( $n = 28$ ), 12.4% had diabetes ( $n = 16$ ), 8.5% had cardiovascular diseases ( $n = 11$ ), 7.8% had rheumatic disease ( $n = 10$ ), and 5.4% had orthopedic disorders ( $n = 7$ ). Other diseases frequencies are shown in Table 5: Stomach disorders ( $n = 2$ ; 1.6%), high cholesterol ( $n = 2$ ; 1.6%), obesity ( $n = 1$ ; 0.8%), nephropathy ( $n = 1$ ; 0.8%), brain disease ( $n = 1$ ; 0.8%),

**Table 3.** Participant characteristics statistics table.

	Age	Marital status	Educational status	Employment Status	Monthly income	Modes of living
SE	.074	.086	.107	.064	.053	.104
SD	.843	.975	1.219	.726	.597	1.180
$\sigma^2$	.710	.950	1.486	.528	.356	1.392
R	3	3	3	3	2	5
Min.	1	1	1	1	1	0
Max.	4	4	4	4	3	5

SE: SD. Error of Mean; Std: Std. Deviation;  $\sigma^2$ : Variance; R: Range; Min.: Minimum; Max. Maximum.

**Table 4.** Participant characteristics frequency table.

Age	<i>n</i>	%	Marital Status	<i>n</i>	%	Educational status	<i>n</i>	%
60–66	53	41.1	Single	1	.8	Primary	59	45.9
67–73	52	40.3	Married	70	54.3	Secondary	20	15.5
74–80	18	14	Divorced	7	5.4	High	22	17.1
81–87	6	4.7	Widowed	51	39.5	Bachelor	28	21.7
Employment Status	<i>n</i>	%	Monthly Income	<i>n</i>	%	Living with	<i>n</i>	%
Full time	7	5.4	Low	54	41.9	Alone	33	25.6
Part time	1	.8	Moderate	67	51.9	My partner	47	36.4
Retired	75	58.1	High	8	6.2	My partner and children	23	17.8
Unemployed	46	35.7				My children	23	17.8
						My friend	3	2.3

*n*: Frequency; *N*: 129.

**Table 5.** Self-reported disease frequency table.

Self reported disease	<i>n</i>	%	Self reported disease	<i>n</i>	%	Self reported disease	<i>n</i>	%
Stomach disorders	2	1.6	Nephropathy	1	.8	Disease-free	45	34.9
Obesity	1	.8	Diabetes	16	12.4	Brain disease	1	.8
Orthopedic disorders	7	5.4	Nodular goiter	1	.8	Cataract	2	1.6
Rheumatic disease	10	7.8	Hodgkin's disease	1	.8	Cholesterol	2	1.6
Neurotic depression	1	.8	Cardiovascular diseases	11	8.5	High blood pressure	28	21.7

nodular goiter ( $n = 1$ ; 0.8%), Hodgkin's disease ( $n = 1$ ; 0.8%), and neurotic depression ( $n = 1$ ; 0.8%). In terms of self-reported diseases, oligoastrocytoma was the stated brain disease, type 2 diabetes was the stated form of diabetes, and varicose vein, cardiac dysrhythmia, vaso-dilatation, and aortic insufficiency were the stated cardiovascular diseases (Table 5).

One-way ANOVA, a test of homogeneity of variances (Levene statistic), and post hoc tests were applied to determine the mean differences between dependent (SAS, SAD, SL, and WBI) and independent (age, marital status, educational status, employment status, monthly income, and self-reported disease) variables. It was found that women in the 60–66 age range had significantly higher SAS ( $md = 1.30314$ ;  $p = .004$ ) and SAD ( $md = 1.35624$ ;  $p = .005$ ) than women in the 81–87 age range; also, women who had bachelor's degrees had significantly higher SAD ( $md = .73590$ ;  $p = .001$ ) than women with only primary school education. Women who had a high monthly income ( $md = 1.75741$ ;  $p = .000$ ) were more satisfied with life than women with moderate income ( $md = .87905$ ;  $p = .000$ ), who in turn were more satisfied than women with low income ( $md = -.87905$ ;  $p =$

**Table 6.** Test of homogeneity of variances and ANOVA table

Independent Variables	Dependent Variables	Levene Statistic	F	df1	df2	F	sig	Groups	Mean difference (md)
Age	SAS	3.570	3	125	4.734	.004	60–66	1.30314*	
							81–87	-1.30314*	
	SAD	2.113	3	125	4.524	.005	60–66	1.35624*	
							81–87	-1.35624*	
Educational status	SAD	2.150	3	125	3.979	.001	Bachelor	.73590*	
							Primary	-.73590*	
Monthly Income	SL	1.347	2	126	26.230	.000	High	1.75741*	
							Moderate	.87905*	
							Low	-.87905*	
	WBI	3.979	2	126		.005	High	1.34606*	
							Moderate	.70101*	
							Low	-.70101*	

\*The mean difference is significant at the 0.05 level.+,.

**Table 7.** The satisfaction with life scale (SLs) frequency table.

Status	<i>n</i>	%			
31–35 Extremely satisfied	28	21.7	15–19 Slightly dissatisfied	9	7.0
26–30 Satisfied	48	37.2	10–14 Dissatisfied	–	–
21–25 Slightly satisfied	36	27.9	5–9 Extremely dissatisfied	–	–
20 Neutral	8	6.2			

*n*: Frequency; *N*: 129.

.000). Finally, women who had high monthly income ( $md = 1.34606$ ;  $p = .005$ ) had higher well-being level than women with moderate income ( $md = .70101$ ;  $p = .005$ ), who had higher well-being than women with low income ( $md = -.70101$ ;  $p = .005$ ). No further significant mean differences were found (Table 6).

Participants were asked how satisfied they were with their life. 37.2% of the participants indicated themselves as satisfied with their lives ( $n = 48$ ), and none of them were extremely dissatisfied/dissatisfied ( $n = 0$ ). The SLS responses showed that 21.7% of the women were extremely satisfied ( $n = 28$ ), 27.9% slightly satisfied ( $n = 36$ ), 6.2% were neutral ( $n = 8$ ), and 7% slightly dissatisfied ( $n = 9$ ) (Table 7).

The regression weights for the SAS, SL, and WBI are presented in Table 8. The regression weights for SL in the prediction of SAS ( $\beta = .350$ ;  $p = .005$ ;  $t = 2.833$ ) and for SAS in the prediction of WBI ( $\beta = .358$ ;  $p = .008$ ;  $t = 2.632$ ) were significantly different from 0 at the 0.01 level (two-tailed), thereby supporting H1 and H2. The regression weight for SL in the prediction of WBI ( $\beta = .669$ ;  $p \leq 0.001$ ;  $t = 4.774$ ) was significantly different from 0 at the 0.001 level (two-tailed), supporting H<sub>3</sub>.

## Discussion

Successful aging related to psychological, cognitive, physical and disease state is currently a major issue. Successful aging, which researchers have

**Table 8.** Regression weights and hypothesis testing table.

Factors	$\beta$	S.E.	t-value	P	Hypothesis	Hypothesis Testing
SL→SAS	.350	.124	2.833	.005**	H <sub>1</sub>	Supported
SAS→WBI	.358	.136	2.632	.008**	H <sub>2</sub>	Supported
SL→WBI	.669	.140	4.774	***	H <sub>3</sub>	Supported

Notes: SAS: The Satisfaction with Life Scale; WBI: World Health Organization well-being index; SL: The Satisfaction with Life Scale; \*significant at the 0.05 level (two-tailed) \*\*significant at the 0.01 level (two-tailed); \*\*\*significant at the 0.001 level (two-tailed).

sought to clarify by approaches such as positive aging, active aging, and effective aging, has been analyzed in model studies in the literature (Glass, 2003; Poon et al., 2003). We applied the SAS scale, developed by Reker (2009), to a total of 129 women following Hazer and Özsungur (2017). The validity and reliability of the SAS [ $\chi^2$  (27): 67.088,  $p < .01$ ;  $\chi^2/\text{df}$ : 2.033; SRMR: .090; RMSEA: .080; NNFI: .905; IFI: .932; CFI: .930; GFI: .911; AGFI: .851] were demonstrated in this study. GFI and AGFI values were found to be lower than in previous studies. The GFI and AGFI fit values are classified as absolute fit indices, which are not considered useful indices in structural equation modeling, contrary to other fit index types (Hu & Bentler, 1999). As these absolute fit indices are more sensitive to sample size, the normality of the data, and high intercorrelations of variables, they may not provide accurate results for the interpretation of compliance values in structural equation modeling (Kline, 2016).

34.9% of the successful aging women in the present study were disease-free. Furthermore, 21.7% of the women had blood pressure disease and 12.4% had diabetes, and 10% of the successful aging women had these two major diseases. Thus, women should take timely precautions against these two diseases in that stage of the aging process. Mass media can play a critical role in coping with this diseases in early ages (Friedman & Tanner, 2007). Additionally, women who were aged 60–66 showed higher self-competence in successful aging ( $md = 1.30314$ ;  $p = .004$ ) and in struggles against difficulties ( $md = 1.35624$ ;  $p = .005$ ) than did those at higher ages. Education was found to be important in struggling against the difficulties of aging. Women with a bachelor's degree had higher self-competence in struggling against difficulties ( $md = .73590$ ;  $p = .001$ ) than did those at other educational levels. Adebowale, Atte, and Ayeni (2012) found that poor well-being increased with age, but was reduced as the level of education increased.

Income was an important determinant of life satisfaction in this study. Elderly life satisfaction has been found to increase with increasing income (Adebowale, et al. 2012; Asiyabola, 2009; Delle Fave et al., 2016; Kabir, Nilsson, & Parker, 2004). According to our results, women with high monthly income were more satisfied with life than women with moderate

income, who in turn were more satisfied than women with low income ( $md = -.87905$ ;  $p = .000$ ). Hutchison (1975) found that differences in gender and marital status were significantly associated with life satisfaction in a study of 893 low-income elderly people. It has also been shown that high levels of happiness and hedonic motivation in high-income elderly increases life satisfaction (Lipovcan et al., 2007), while social support insufficiency decreases life satisfaction (Newsom & Schulz, 1996) in the aging process.

It was also shown that SL was significantly associated with SAS ( $\beta = .350$ ;  $p = .005$ ;  $t = 2.833$ ). There has been no study previously of associations between SL, WBI, and SAS. Life satisfaction is directly associated with the differences between the expectations and ambitions of the individual in his/her real life, and the elderly view of life. Åberg, Sidenvall, Hepworth, O'Reilly, and Lithell (2005) found that the issues of activity, independence, and adaptation were the most important for life satisfaction, and SAS involves all these factors (Reker, 2009). According to another finding, SAS ( $\beta = .358$ ;  $p = .008$ ;  $t = 2.632$ ) and SL ( $\beta = .669$ ;  $p \leq 0.001$ ;  $t = 4.774$ ) were significantly associated with WBI. Deci and Ryan (2000) found that intrinsic motivation led to positive levels of elderly health behavior and well-being. Furthermore, it was found that physical functions were crucial in determining well-being when evaluating the health status of the elderly (Walker, 2005; Windle & Woods, 2004). The findings of this study regarding the association between SL and WBI are in the same direction as reported in the literature (Diener, 2009; Heo, Chun, Lee, & Kim, 2016; Pavot & Diener, 2008).

This research has several limitations. The sample size was small. Participants in the present study were Turkish citizens of the province of Adana, in particular the Women's Rest Homes located in the Çukurova District of the province of Adana, and thus may not be representative of the general population, and further research may yield different results in samples with other cultural characteristics. A further limitation is the quantitative research methodology. The responses of the participants are limited to the questions formed in advance, which may prevent participants' real thoughts on the research subject from emerging. On the other hand, it is important to research women's lives from a multicultural perspective in a developing region.

Future qualitative studies are recommended to examine which diseases affect successful aging. Furthermore, various perceptual and behavioral issues of SAS should be examined applying interdisciplinary approaches to improve our investigation of older women's bodies and perceptions of aging (Weil, 2008).

For women's successful aging, it is necessary for them to struggle with difficulties and have healthy lifestyle habits. In addition, the level of

women's satisfaction with life should be high. Women's successful aging improves as women are satisfied with life, from which well-being emerges. This tripartite structure has an important place in the life cycle of women. It is recommended that awareness trainings be provided by international organizations to improve women's health and ensure their successful aging. Interdisciplinary activities and studies need to be carried out for women in developing countries to have a better and healthy life. In this context, it is recommended that the successful aging of *rheumatic* and palliative patients be investigated to better understand the health of women. The associations between the successful aging and psychological diseases, organizational behavior, glass ceilings in organizations, entrepreneurship, intergenerational conflicts, unexplained infertility, menstrual irregularities, and breast cancer can be investigated. Furthermore, it is recommended that elderly care nurses be provided with the necessary training to raise their awareness of successful aging.

## Conclusion

This study revealed important associations between satisfaction with life, well-being, and successful aging of women. It was determined that women's coping with difficulties in their lives and a positive view and perception enabled their successful aging. Furthermore, elderly women should attend to certain major diseases, such as high blood pressure, diabetes, rheumatic disease, and orthopedic disorders, in the aging process. The SAS was determined to be a valid and reliable scale with women sample [ $\chi^2$  (27): 67.088,  $p < .01$ ;  $\chi^2/df$ : 2.033; SRMR: .090; RMSEA: .080; NNFI: .905; IFI: .932; CFI: .930; GFI: .911; AGFI: .851]. Due to its status as an interdisciplinary field, SAS should be applied to a variety of socio-demographic samples.

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## Appendix A

**Table A1.** Successful aging scale (SAS)\*

Factors	Items	References
<b>Healthy Lifestyle Habits (HLH)</b>	1.I make attempts to remain relatively free of disease and disability (avoiding disease/disability)	Rowe and Kahn (1997)
	2.I try to maintain good physical and mental functioning as I age (high cognitive/physical functioning)	Rowe and Kahn (1997)
	3.I make attempts to engage in healthy lifestyle habits (avoiding disease/disability)	Rowe and Kahn (1997)
<b>Struggle Against Difficulties (SAD)</b>	4.When things don't go as well as they used to, I keep trying other ways until I achieve the same results (compensation)	Baltes and Baltes (1990)
	5.In difficult times, I develop mental toughness in dealing with the situation (secondary control)	Schulz and Heckhausen (1996)
	6. I can deal with whatever comes my way (selection, optimization, compensation adaptivity)	Baltes and Baltes (1990)
	7. I am actively engaged with life through productive activities (engagement with life)	Rowe and Kahn (1997)
	8. I strive to remain independent for as long as possible (autonomy)	Ryff (1989)
	9. I am actively engaged with life through regular social contacts (engagement with life)	Rowe and Kahn (1997)
	10. I make every effort to achieve goals that are important to me (optimization)	Baltes and Baltes (1990)

Note: \*This version was applied in Turkey.

Turkish Version of SAS model fit indices:  $\chi^2$  (27): 64.993,  $p < .01$ ;  $\chi^2/df$ : 2.407; SRMR: .0319; RMSEA: .053; NNFI: .960; IFI: .976; CFI: .976; GFI: .976; AGFI: .951 (Hazer & Özsungur, 2017).