Original Article

The Effect of Leisure Activities on Successful Aging

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Received: 01-Jun-2022;
Revision: 22-Jun-2022;
Accepted: 13-Jul-2022;
Published: 18-Nov-2022

ABSTRACT

Backround: The world population is aging with the prolongation of the expected life expectancy. With the increase in the elderly population in the World, successful aging and leisure activities gained importance. Leisure activities contribute to successful aging by supporting an active lifestyle. **Aim:** This study was designed to examine the relationship between older adults' participation in leisure activities and successful aging indicators such as life satisfaction, happiness, mental well-being, depression, anxiety, and stress. **Subjects and Methods:** The sample of this one-group and pre-post experimental study consisted of 28 older adults. The data were collected using the Descriptive Information Form for the Older Adults, The Happiness, Depression-Anxiety-Stress, Satisfaction with Life, and Mental Well-being Scales. The older adults participated in activities such as bead stringing, rope tying, socks matching, rope knitting, chess, and checkers, according to their preferences, for 30–45 min daily for 7 weeks. **Results:** The Happiness Scale scores statistically significantly increased to 24.39 ± 5.15 (P = 0.027 <0.05) at post-test after the activity. Similarly, Life Satisfaction Scale scores increased significantly to 16.54 ± 3.49 after the activity (P = 0.001 <0.05). There was a statistically significant decrease in Depression and Stress Scale scores (depression P = 0.035 <0.05; stress P = 0.011 < 0.05); however, a statistically insignificant increase was seen in anxiety scores (P = 0.758 >0.05). A statistically insignificant increase was also found in the Mental Well-Being Scale post-test score (P = 0.103 >0.05). **Conclusion:** Although leisure activities, effective in successful aging, have a significant effect on the happiness, life satisfaction, depression, and stress levels of older adults, they have no significant effect on the levels of anxiety and mental well-being. To maintain the positive effects of leisure activities, which are effective on success and aging in older adults, these activities can be included in the programs of institutions where people of this age group live.

Keywords: *Leisure activities, nursing home, older adults, successful aging*

Introduction

The world population is aging with the prolongation of life span.[1] Worldwide, there were 727 million people aged 65 years and over in 2020. In the next 30 years, it is estimated that the number of older adults worldwide will be more than twice this number, and by 2050 it will exceed 1.5 billion. Globally, the population aged 65 years and over is expected to grow from 9.3% in 2020 to 16.0% in 2050.[2]

Considering the increase in the long-life expectancy of countries, the concept of successful aging becomes even more remarkable. Researchers emphasized that for successful aging, there should be indicators such as happiness, psychological well-being, and effective adaptation as well as maintaining physical and cognitive efficiency, absence of illness and disability, and constant and active participation in social life.[3,4]Activity is essential in successful aging. The literature shows

Access this article online

Quick Response Code:

Website: www.njcponline.com

DOI: 10.4103/njcp.njcp_384_22

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How to cite this article: Çol BK, Köse BG, Başaran AG. The effect of leisure activities on successful aging. Niger J Clin Pract 2022;25:1904-10.

that participation in leisure activities has positive effects on successful aging indicators. Various studies have revealed that participation in leisure activities is effective to improve subjective and psychological well-being, life satisfaction,[5-8] and happiness level,[9,10] which are indicators of successful aging and decrease depression,[11-13] anxiety,[14-16] and stress[17,18] levels. The present study also supports the view that participation in leisure activities, leading to an active lifestyle, is a universal tool that contributes to successful aging.

Despite the limited evidence in the current literature, participation in leisure activities has been reported to have a positive relationship with physical and mental well-being. However, no studies, to our knowledge, have tested these relationships at the same time. This study was designed to examine the relationship between older adults' participation in leisure activities and successful aging indicators such as life satisfaction, happiness, mental well-being, depression, anxiety, and stress.

Methodology

Participants

This study was a single group pre-post experimental study carried out in nursing homes between November12 and December 24, 2019. The population consisted of 53 older adults registered in nursing homes. The sample included 28 older adults who were not bedridden and who agreed to participate in the leisure activity intervention program within the scope of occupational therapy and rehabilitation course.

Instrumentation

The data were collected using the Descriptive Information Form for the Older Adults, The Oxford Happiness Questionnaire, The Depression-Anxiety-Stress Scale, The Satisfaction with Life Scale, and The Warwick–Edinburgh Mental Well-being Scale Short Form.

The Descriptive Information Form for the Older Adults

The form consists of 11 questions regarding gender, age, marital status, educational status, number of children, number of siblings, chronic disease, previous occupation, financial support, and length of stay in the nursing home.

The Oxford Happiness Questionnaire

It was developed by Hills ve Argyle (2002) as a 6-point Likert-type inventory consisting of 8 items to evaluate the level of happiness.[19] The scale was prepared as a 7-item and 5-point Likert type (1-I strongly disagree, 5-I strongly agree). Higher scores indicate a higher level of happiness. In this study, Cronbach's alpha value of the Happiness Scale was found to be 0.774.

The Depression-Anxiety-Stress Scale (DAS-21)

The DAS-21 is a combination of 21 items (DASS-21), three self-rating scales designed to measure the emotional stages of depression, anxiety, and stress. It was developed by S.H. Lovibond and P.F. (1995) by reducing the items of the DASS-42 to shorten the response time. There are 21 questions on the scale in which the severity of depression, stress, and anxiety symptoms are scored between 0 and 3. Scoring ranges from 0, absence of symptoms, to 3, maximum symptoms. The depression subscale consists of questions numbered "2, 6, 8, 11, 14, 16, 21", the anxiety subscale "1, 3, 10, 13, 15, 19, 20", and the stress subscale "4, 5, 7, 9, 12, 17, 18".Thescores on the depression scale indicate normal (0–4), mild (5–6), moderate (7–10), severe (11–13) severe, and extremely severe (14+) depression levels, thescores on the anxiety refer to normal (0–3), mild (4–5), moderate (6–7), severe (8–9), and extremely severe (10+) anxiety, and the scores on the stress scale indicate normal (0–7), mild (8–9), moderate (10–12), severe (13–16), and extremely severe (17+) stress levels. The sums for each scale in DASS-21 are doubled so that they can be compared to those in the 42-item DASS.[20] In this study, Cronbach's alpha value of the DASS 21 was found to be 0.909 for the depression sub-dimension, 0.899 for the anxiety sub-dimension, and 0.858 for the stress sub-dimension.

The Satisfaction with Life Scale (SLS)

Developed by Diener *et al*.[21] (1985), the Life Satisfaction Scale measures general life satisfaction. It is a 5-point Likert (1–5) type one-dimensional scale and consists of five items. The highest and the lowest scores to be obtained from the scale are 25 and 5. The scale does not have a cut-off point, and high scores indicate a high degree of satisfaction. In this study, Cronbach's alpha value was found to be 0.806.

The Warwick–Edinburgh Mental Well-Being Scale Short Form (WEMWBS-SF)

The validity and reliability study of the short form of the scale was conducted by Stewart–Brown *et al*.[22] (2009). The WEMWBS-SF is a 5-point Likert-type (1–5), 7-item scale consisting of positively worded items, and in practice, participants are asked to describe their experiences by considering the last 2 weeks. Cronbach's alpha value was found to be 0.925 in this study.

Intervention

Firstly, the Descriptive Information Form, the Happiness, Depression-Anxiety-Stress, Life Satisfaction, and Mental Well-being Scales were applied to the participants who agreed to participate in the study. An intervention program including leisure activities

was prepared for the participants within the scope of the occupational therapy course for older adults. To stimulate the cognitive and limited physical development of the participants, activities such as bead stringing, rope knitting, rope tying, chess, and checkers were involved in the leisure activity program. All participants in this group participated in an activity program of their choice for 30–45 min once a week for 7 weeks. At the end of the 7-week intervention program, the same scales were applied as the post-test.

Statistical analysis

Statistical Package for the Social Sciences (SPSS) 22 package program was used for the statistical analysis of the data. Descriptive data are presented as percentages, mean, and standard deviation. A dependent paired *t*-test was used in the pre-post-test analysis. Pearson's correlation analysis was performed to examine the relationship between the scales. The significance value was accepted as $P < 0.05$. Further, 0–0.39 refers to a weak relationship, 0.40–0.69 moderate relationship, 0.70–0.89 strong relationship, and 0.90–1.00 very strong relationship.

Results

A total of 64.3% of the participants were male, 42.9% were between 71 and 80 years old, 60.7% were widows (er), 60.7% had no education, 35.7% had no children, 28.6% had 4 or more siblings, 57.1% had a chronic disease, 64.3% had a salary, 17.9% were civil servants, 92.9% stayed in the nursing home for 1–9 years, and 46.4% could not live alone. The descriptive data are shown in Table 1.

Although the score of the participants obtained from the pre-test of the Satisfaction with Life Scale was low at 11.5 ± 4.68, it significantly increased to 16.54 ± 3.49 after the intervention ($P = 0.001 < 0.05$). Despite not being statistically significant, an increase was seen between the Mental Well-being Scale pre-test score (22.79 ± 7.64) and the post-test score (25.82 ± 5.36) ($P = 0.103 > 0.05$). The results of the pre-test showed that the participants were in extremely severe depression (18.89 ± 7.24), extremely severe anxiety (17.46 ± 7.37), and extremely stressed (20.29 ± 7.26).Although there was a statistically significant decrease in depression (14.82 ± 5.68) and stress (14.89 ± 6.57) scores in the post-test applied after the intervention (depression $P = 0.035 < 0.05$; stress $P = 0.011 < 0.05$), the participants had still severe depression and extremely severe stress. A statistically insignificant increase of 18.04 ± 5.76 was also observed in the anxiety score ($P = 0.758 > 0.05$).The Happiness Scale score increased significantly from 20.89 ± 6.03 to 24.39 ± 5.15 ($P = 0.027 < 0.05$). The pre-test and post-test results of the participants are shown in Table 2.

Table 1: Descriptive information of participants

	Frequency (*n*)	Percentage (%)
Gender		
Female	10	35.7
Male	18	64.3
Age		
60-70	8	28.6
71-80	12	42.9
81-90	8	28.6
Marital status		
Married	6	21.4
Single	4	14.3
Divorced	1	3.6
Widow (er)	17	60.7
Having education		
No	17	60.7
Yes	11	39.3
Number of children		
0	10	35.7
1	3	10.7
2	4	14.3
3	6	21.4
4 and over	5	17.9
Number of siblings		
0	5	17.9
1	4	14.3
2	6	21.4
3	5	17.9
4 and over	8	28.6
Having a chronic disease		
Yes	16	57.1
No	12	42.9
Previous occupation		
Civil servant	5	17.9
Worker	8	28.6
Self employed	5	17.9
Housework	9	32.1
Unemployed	1	3.6
Financial support		
Social security	9	32.1
Family	1	3.6
Salary	18	64.3
Length of stay in the nursing home		
1-9 years	26	92.9
10-19 years	1	3.6
20 years and over	1	3.6
Reason for staying in the nursing home		
Not being able to live alone	13	46.4
Having no relatives	6	21.4
The family does not look after	9	32.1

The correlation relationship between the pre and post-intervention differences presented in Table 3 shows a statistically significant, positive, and moderate relationship between the Satisfaction with Life

Table 2: Comparison of scores the participants got on the pre-test and post-test scales

	Pre-test	Post-test	Difference	Intra-group *P*
The SLS	11.5±4.68 11 (5-20)	16.54±3.49 16 (10-24)	-5.04±5.84 -4.5 (-18-4)	0.0001* (*t* =-4.562)
The WEMWBS-SF	22.79±7.64 22.5 (11-35) 43 (10-80)	25.82±5.36 26 (15-35) 55.5 (40-80)	-3.04±9.52 -4 (-22-18) -9 (-61-35)	0.103 (*t* =-1.687)
DAS-21 anxiety	17.46±7.37 15.5 (7-32)	18.04±5.76 18.5 (8-29)	-0.57±9.7 -1.5 (-19-21)	0.758 (*t* =-0.312)
DAS-21 depression	18.89±7.24 18 (7-31)	14.82±5.68 16 (7-30)	4.07±9.71 4.5 (-13-23)	0.035* (*t*=2.218)
DAS-21 stress	20.29±7.26 23 (7-29)	14.89±6.57 14.5 (7-30)	5.39±10.5 5 (-22-21)	0.011* (*t*=2.717)
The Happiness Scale	20.89±6.03 21.5 (11-32)	24.39±5.15 23.5 (17-35)	-3.5±7.95 -3.5 (-23-8)	0.027* (*t*=-2.331)

Table 3: Correlation between differences in scales before and after the intervention

Difference	SLS	The WEMWBS-SF	DAS-21 anxiety	DAS-21 depression	DAS-21 stress	The Happiness Scale
The SLS						
R	1	0.632**	-0.399*	-0.584**	-0.450*	0.641**
P		0.000	0.035	0.001	0.016	0.000
The WEMWBS-SF						
R		1	-0.663**	-0.837**	-0.654**	0.815**
P			0.000	0.000	0.000	0.000
DAS-21 anxiety						
R			1	0.784**	0.716**	-0.682**
P				0.000	0.000	0.000
DAS-21 depression						
R				1	0.741**	-0.787**
P					0.000	0.000
DAS-21 stress						
R					1	-0.713**
P						0.000
The Happiness Scale						
R						1
P						

Scale and the Mental Well-being and the Happiness Scale scores (r = 0.632; r = 0.641, respectively) and a statistically significant negative relationship between the Satisfaction with Life Scale and the DAS Anxiety, Depression and Stress Scale scores (r = −0.399, r = −0.584, r = −0.45, respectively). Besides, it was observed that there was a statistically significant, positive, and strong (r = 0.815) relationship between the WEMWBS-SF and the Happiness Scale scores (r = 0.815), and a statistically significant and negative relationship between the WEMWBS-SF and DAS Anxiety, Depression and Stress Scale scores (r = −0.663, r = −0.837, r = −0.654, respectively). A statistically significant and negative relationship was also observed between the Happiness Scale, and the DAS Anxiety, Depression and Stress Scale values (r = −0.682, r = −0.787, r = −0.713, respectively).

Discussion

Leisure activities, a significant element of lifestyle, lead to an increase in happiness, mental well-being, and satisfaction in life and contribute to successful aging with a decrease in depression, anxiety, and stress levels.

Evidence shows that life satisfaction decreases with age.[23] The literature shows that life satisfaction gradually decreases with age and these decreases could be significant.[24] In this study, participation in leisure activities significantly increased the life satisfaction of older adults. Similarly, various studies report that participation in leisure activities is positively associated with life satisfaction, and individuals participating in the activity achieve higher life satisfaction.[5-8,25,26] Paggi *et al*.[27] (2016) noted that leisure activities had a partial effect on life satisfaction. In a study, in which Cha (2018)

evaluated the relationship between leisure activity and life satisfaction, it was suggested that spending more time on leisure activities provides higher life satisfaction.[28]

The literature cites that happiness decreases with age.[29] However, the concept of happiness is frequently emphasized in successful aging.[30] It is known that activities rather than age and gender are effective on happiness levels in old age. Previous studies argued that older people who participated in leisure activities were happier.[9-10,26,30] Consistent with the previous studies, the current study showed that the level of happiness increased statistically significantly after leisure activities. The increase in the level of happiness may be due to the improvement in achievement, self-confidence, independence, relaxation, pleasure, and positive feelings of the person participating in leisure activities.

Depression is one of the most common mental health problems among older adults.[31] Depression affects approximately 7% of the world's older population.[32] Depression is reported to be common among older adults living in nursing homes.[33-35] Participation in leisure activities is associated with lower levels of depression in older adults[11-13,18] and has a protective effect against depression.[36,37] Therefore, it is obvious that participation in leisure activities is effective in reducing the level of depression. Relevant findings emphasize the effect of leisure activities on depression, one of the indicators of successful aging. Depression levels in older adults also reduced significantly after leisure time interventions in this study. Participation in leisure activities in this population has been shown toreduce social isolation risks by encouraging social interaction, reinforcing one's self-conception and social roles, improving their sense of belonging and worthiness, facilitating communication among participants and establishing positive interpersonal bonds, increasing positive emotions and decreasing depression.[12,38] Based on these findings, our current results are thought to be due to social interaction. However, in the present study, despite the decrease in the level of depression after the intervention program, the reason why it could not reach the normal level from the medium level may be due to the low frequency of leisure activities and the lack of continuity. The literature emphasizes that the frequency, as well as participation in leisure activities, has a significant effect on depression in older adults. The frequent participation of this population in leisure activities is associated with lower levels of depression.[12,39] These results highlight the importance of the frequency of an intervention program based on leisure activities.

Stress is a major mental health problem in the older adult population.[40] Older people are more vulnerable to stress than people in other age groups[41] and it is prevalent in older adults.[40,42] There is a relationship between stress and leisure activities, and participation in activities reduces stress levels.[17,18] The present study findings revealed that leisure activities significantly reduced the stress level experienced by older adults from moderate to a normal level.

In this study, no statistically significant relationship was found between leisure activities and anxiety levels. The literature reviews show that anxiety in older adults has a long-term[43] and chronic course.[44] In this study, the reason why the level of anxiety did not decrease after the intervention may be the low frequency and duration of leisure activities and the expectation that they would display a skill within the scope of this activity. In addition, although there was an increase in mental well-being after the intervention, no statistically significant difference was found. Mental well-being includes both hedonic (subjective well-being) and eudemonic (psychological well-being) dimensions.[45] Subjective and psychological well-being are significant components of successful aging, and leisure activities play a key role in successful aging by increasing subjective[12,46,47] and psychological[8,30,48] well-being of older adults.

The reason why the present study results are not consistent with those reported in the literature is that depression, anxiety, and stress are among the mental well-being indicators. In this context, we think that an unchanged anxiety level affects mental well-being. Besides, the correlation analysis results showed that the WEMWBS-SF had a statistically significant negative relationship with the DAS-21 Anxiety, Depression, and Stress Scale values.

Limitations

The main identified limitation of this study is that the results cannot be generalized to all older adults, because the intervention was carried out only in one nursing home. Another limitation is the limited duration and frequency of leisure activities and the selection of limited activities.

Conclusions

Although leisure activities, effective in successful aging, have a significant effect on the happiness, life satisfaction, depression, and stress levels of older adults, they have no significant effect on the levels of anxiety and mental well-being. To maintain the positive effects of leisure activities, which are effective on success and aging in older adults, these activities can be included in the programs of institutions where people of this age group live.

Implications for public health practice

In this age group, the positive effect of leisure activities on successful aging is gaining increasing attention. The results of the present study contribute to the literature by determining the mediating effect of leisure activities on life satisfaction, happiness, mental well-being, depression, and stress, and emphasize their importance as a protective factor supporting the successful aging of older adults.

Based on these results, it is important to develop evidence-based leisure activity intervention programs to increase life satisfaction, happiness, and mental well-being of older adults living in nursing homes, and reduce their depression and anxiety levels. These findings can be used to provide scientific evidence to guide healthcare providers, administrators, and policymakers in the development of cost-effective leisure activity intervention programs for successful aging.

It is recommended to carry out further studies by preparing longer-term intervention programs with different activities with a larger sample group to better understand the relationship between leisure activities and life satisfaction, happiness level, and mental health of older adults.

Research ethics

The research was carried out with the permission of Recep Tayyip Erdoğan University Humanities and Social Sciences Research Ethics Committee (2020/173).

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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