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The Investigation of the Impact of Walking Football on Selected Physical Fitness Parameters and Geriatric Depression in Elderly Male Individuals

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ABSTRACT

Objective: This study was conducted in order to examine the effect of walking football on selected physical fitness parameters and geriatric depression in elderly male individuals. **Materials and Methods:** The study consisted of a pre-post test experimental study and included the students of Marmaris Refresher University (TAU) and the individuals living in Marmaris that were selected by random sampling. The participants, 17 of whom were in the control group and 17 of whom were in the experimental group, were administered the Senior Fitness Test (SFT) protocols consisted of "chair-stand" test, "8-foot up-and-go" test and "Chair Sit-And- Reach" test as well as the "Geriatric Depression Scale" was implemented. While walking football training was given to the experimental group for 8 weeks, two days a week, no practice was conducted with the control group. **Findings:** The average age of the individuals participating in the study is 69±5.61. It was determined that the data was normally distributed, and the para-metric tests were applied. There were the significant differences ($p<0.01$) between the pre-post test results of the experimental group participants in the "chair-stand" test, "8-foot up-and-go" test and "Chair Sit-And- Reach" test and geriatric depression scale, and no differences were observed in the pre-post test measurement results of all variables of the control group. According to Pearson correlation analysis, the "chair-stand" variable had a positive relationship with the "8-foot up-and-go" test, the "Chair Sit-And-Reach" test, and geriatric depression and the age of the participants. It was observed that the "8-foot up-and-and-go" variable has a positive relationship with geriatric depression. **Conclusion:** As a result, it can be stated that walking football has a positive effect on elderly men physically and psychologically.

Key Words: Geriatrics, Depression, Physical Fitness, Walking, Football.

Yaşlı Erkek Bireylerde Yürüyüş Futbolunun Seçilmiş Fiziksel Uygunluk Parametreleri ve Geriatrik Depresyona Etkisinin İncelenmesi

Özet

Amaç: Bu çalışma, yürüyüş futbolunun yaşlı erkek bireylerde seçilmiş fiziksel uygunluk parametreleri ve geriatrik depresyona etkisini incelemek amacı ile yapılmıştır. **Gereç ve Yöntem:** Araştırma, deneysel bir çalışma olup Marmaris Tazelenme Üniversitesi öğrencileri ve Marmaris'te yaşayan tesadüfi örneklem yolu ile seçilen bireyleri kapsamaktadır. 17'si kontrol, 17'si deney grubu olan katılımcılara, Senior Fitness Test (SFT) protokolündeki "sandalyede otur-kalk, 8 adım kalk yürü testi ve sandalyede otur-uzan" testleri ve ayrıca "Geriatrik Depresyon Ölçeği" uygulanmıştır. Deney grubu ile 8 hafta, haftada iki gün yürüyüş futbolu çalışması uygulanırken, kontrol grubu ile çalışma yapılmamıştır. **Bulgular:** Çalışmaya katılan bireylerin yaş ortalaması 69±5.61' dir. Veriler normal dağılımda olup parametrik testler uygulanmıştır. Deney grubunun sandalyede otur-kalk, 8 adım kalk-yürü, sandalyede otur-uzan ve geriatrik depresyon ölçeği ön-son test sonuçları arasında anlamlı bir farklılık bulunmuş olup ($p<0.01$), kontrol grubunun tüm değişkenleri ön-son test ölçüm sonuçlarında bir farklılık görülmemiştir. Pearson korelasyon analizine göre; sandalyede otur-kalk değişkeninin 8 adım yürü testi, otur-uzan testi ve geriatrik depresyon ve katılımcıların yaşı ile olumlu bir ilişkisi olduğu; 8 adım yürü değişkeninin geriatrik depresyon ile olumlu ilişkisi bulunduğu görülmüştür. **Sonuç:** Sonuç olarak yürüyüş futbolunun yaşlı erkek bireylere fiziksel ve psikolojik açıdan olumlu etki ettiği söylenebilir.

Anahtar Kelimeler: Geriatri, Depresyon, Fiziksel Uygunluk, Yürüyüş, Futbol.

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INTRODUCTION

The definition of old age by the World Health Organization (WHO, 2021), as the decrease in the individual's capacity to adapt to the environment, it has been stated that middle age covers the age range of 45-59, old age is 60-74, advanced old age is 75-89, and oldest old age is 90 and over. Old age which manifests itself as slowing down and decreasing efficiency in all systems that continue until the end of human life, is a process that is difficult to control (Sarı, 2013).

All people in the World have the right to have a healthy life, but this desire affected significantly by the living environment, environmental conditions and the factors such as exposure to health-related risks (such as air pollution or violence) and limited access to necessary services (i.e. health and social care); however, the number and the rate of people aged 60 and over is increasing rapidly. While the studies show that the population aged 60 and over was 1 billion in 2019, it is estimated that this number will increase to 1.4 billion in 2030 and 2.1 billion in 2050. This increase has occurred at an unprecedented pace and moreover is expected to accelerate further in the coming years, especially in developing countries. In 2018, WHO made a new classification considering the aging of the population and redefined the age periods as adolescence between the ages of 0-17, youth between the ages of 18-65, middle age between the ages of 66-79, and old age between the ages of 80-99 (WHO, 2015). With a different perspective, the United Nations Department of Economic and Social Affairs accepts the age of 60 as the starting limit of old age (UN-DESA, 2017). As a consequence, it has been stated that it is urgent to accelerate the works to make the World suitable for the elderly in terms of health and social care, transportation, housing and urban planning. Old age is a phase where many things change in individuals' lives, longing for the past increases, losses occur in social life, and conflicts with younger generations occur. Individuals may experience changes in their emotional state of being owing to these particular changes and differences. Social support received from family members and friends plays an active role for coping with the negativities brought by old age (Arslan, 2019). This situation which constitutes the theme of our study, is that walking football, an alternative and different sport, aims to provide men with both the excitement of a new endeavor and to be healthy in terms of physical and physiological parameters, away from inactivity in a social environment.

Especially in our country, considering that activity decreases for individuals aged 65 and above, which coincides with the retirement period, walking football seems to be a good alternative to encourage this age group to move.

Walking football is a sport played under special rules so that older people can easily practice it. In walking football, volunteers cannot run and are only allowed to walk throughout the match, provided that one foot touches the ground at all times (Knapik, Meredith, Jones, Suek, Young, Evans, 1985). While playing this sport, no physical contact or interference between players is allowed to prevent injuries, and the ball should not be above head height. The intensity of this sport tends to vary widely, from low to high, depending on the duration of each match session and the age of the participants (Zainudin, Salle, & Aziz, 2021). This activity is a safe aerobic exercise as it is an activity that allows individuals who play football to remain active as they get older, and allows those who have no football experience to play without their lack of skills and knowledge restricting them (White, McInerney, Young, Elston, Dogramaci, Fitzsimons, Bennie, 2021). The fact that it is played on a field that is smaller than a standard football field and is close to a basketball court reduces the severity and intensity of the activity. According to the "Rating of Perceived Exertion Scale" (RPE), which determines the intensity of the activity according to the degree of strain on the body, it is thought that this aerobic exercise, which will make each participant breathe faster and sweat after 10 minutes, without any disruption in their speech, will have positive effects on the lower extremity strength and flexibility, agility, dynamic balance and geriatric depression of elderly male individuals in our country.

MATERIALS AND METHODS

Study type

This is a study lasting a total of 55 minutes, consisting of a 20-minute warm-up, 10-minute first period, a 5-minute rest break, followed by a 10-minute second period, and 10-minute stretching and breathing exercises performed at the end of the activity, applied to the experimental group for 8 weeks. April-May were preferred so that the volunteer individuals participating in the study would not be adversely affected by weather conditions owing to their ages, and in order that the program could continue steadily. The data was collected face to face by the researcher, and Marmaris Armutalan Cultural Center and astroturf field were used as the data collection place. As of March 30, 2023, participants were contacted, necessary information was shared and consent forms were signed. A pre-test was administered to all participants on April 3, 2023, and after the 8-week walking football activity of the experimental group, the study was terminated by giving a post-test to all participants on May 30, 2023.

Study group

The population of the study consists of male individuals aged 60 and over living in Marmaris, the sample consists of voluntary participants from Marmaris Tazelenme Üniversitesi (Marmaris Refreshment University, TAU) students, and male individuals aged 60 and over in Marmaris district selected by random sampling method. The literature was examined in detail, and using the reference study obtained (Kammoun et al. 2022), the standardized effect size was calculated from the mean and standard deviation values of similar applications. G-power calculation was administered for the study with an effect size of 1.06. Accordingly, it was determined that the study should be conducted with 17 volunteer participants in two groups (experimental and control),

with an alpha of 0.05, as well as an effect size of 1.06, and a power of the test of 0.85.

Dependent and independent variables

In the study, the independent variables are the walking football program and time, while "chair-stand" test, "8-foot up-and-go" test and "Chair Sit-and-Reach" test and "geriatric depression Scale" in the Senior Fitness Test (PFT) protocol can be specified as dependent variables.

Data collection tools

Height and Body Weight:

The body weights of the volunteer individuals participating in the study were measured using measurement tools with a precision of 0.01 kg and heights with a precision of 0.01 cm (Zorba and Saygın, 2013).

Chair-Stand Test:

For this test given to determine leg strength, a straight-backed chair with a sitting height of 43.18cm (12-inch), without armrests, and a Casio HS-5 M brand stopwatch were used. The individual was asked to sit in the middle of the chair with his back upright, his feet on the ground, and his arms crossed in front of his chest (with right hand on the left shoulder, left hand on the right shoulder); while the individual was in this position, the test started with the command of "go!" and they did "full stand" as much as they could for 30 seconds, the number of "full stands" performed by the subject during 30 seconds constituted the subject's score. In order to perform the test safely, the back of the chair was leaned against the wall. Each subject was both demonstrated and instructed how to do the test, and after making sure that each subject understood how to do the test by making 2-3 trials, the test started (Rikli and Jones, 2001).

8-Foot Up-And-Go Test:

This test is a test to determine agility and dynamic balance. A straight-backed, armless chair with a sitting height of 43.18cm (17 in), a Tera 3m/13mm steel tape measure made in China, a cone, a Casio HS-5 M brand 1/10sec precision stopwatch, and a distance of 2.44cm were used during the test. In order to perform the test safely, the back of the chair was leaned against the wall. The cone placed 2.44 cm forward from the front edge of the chair was 1.5 m. The back was left blank. The participant was seated in the middle of the chair and his back was allowed to lean back. With both hands on their knees and their feet fully on the ground, they were asked to turn around the cone 2.44 cm away with the "start" command, reach the chair again, and sit back as soon as possible. The moment they started to move, the stopwatch was started, and the moment he finished the distance and sat back on the chair, the stopwatch was stopped. The score time was recorded in 1/10 of a second. The participant was asked to perform this test once as a trial, and twice with the stopwatch running, and the best time was recorded as the score (Rikli and Jones, 2001).

Chair Sit-and-Reach Test:

For this test, which is used especially to determine the flexibility of the hamstring muscle group, an armless, straight-backed chair with a sitting height of 43.18 cm and a ruler of 46 cm length were used. The participant was seated in a chair leaning against a wall or a solid place, with the junction of the thigh and hip bones in front of the chair seat. The participant was allowed to extend one foot forward, in full extension, with the heel touching the ground and the foot approximately 90 degrees neutral, as they wish (right or left), while they were seated with the other foot towards the end of the chair, with the knee flexed at approximately 90 degrees and the sole of the foot flat on the floor. The participant was asked to sit and reach their toe, without pushing the pain limit, in a position with their hands on top of each other and their middle fingers in line, by extending their body forward with both hands, without bending their extended knee. If the tips of the fingers do not touch the tips of the feet, the distance between them is in centimeters (-); zero (0) if the fingertips of the middle hand touch the tip of the foot; if the tip of the finger exceeds the tip of the foot, the distance passed by the tip of the middle finger is taken in a (+) value in centimeters, and recorded on the score sheet (Rikli and Jones, 2001).

Geriatric Depression Scale-Short Form (GDS):

It is a scale consisting of 15 questions and was developed by Burke et al. in 1991 (Burke et al. 1991). The participant was asked 15 Yes/No questions, taking into account their situation within the last week. Each question was scored out of 1 point according to its nature, and the total score was calculated. Scores from 0 to 4 indicate “no depressive symptoms”, scores from 5 to 8 indicate “mild depressive symptoms”, while scores from 9 to 11 indicate “moderate depressive symptoms”, and scores of 12 and above indicate “severe depressive symptoms”. The Turkish reliability and validity study of the scale was conducted by Durmaz et al. in 2018 (Durmaz et al. 2018).

Procedures

Before starting the study, the participants were asked to obtain a health report from their family doctor, writing the following statement in: "There is no harm in terms of health in doing the Walking Football activity." This study was carried out in April-May when the weather conditions were suitable, it was an efficient factor in the stable participation of the experimental group in the program. Before beginning the program, the experimental and the control group participants were given the "Chair-Stand", "8-Foot Up-And-Go" and "Chair Sit-And-Reach" tests in the Senior Fitness Test (SFT) protocol as a pre-test. “Geriatric Depression Scale” was applied as well. Afterwards, only the experimental group was given warm-up exercises to ensure they were physically ready, and two teams consisting of 5 athletes played walking football in 10-minute periods with 5 minutes of rest in between. In accordance with the Rating of Perceived Exertion Scale (RPE), the study was carefully carried out at an intensity that would accelerate the breathing of each participant without disrupting their

speech. In the walking football practice, utmost care was taken to ensure that the ball did not exceed the height level, that the athletes did not jump and that one foot was always in contact with the ground, that the athletes were not close enough to interfere with each other and that they did not run, ensuring that they only walked.
While acting in accordance with the rules, elderly men were supported to have a happy time in a social environment and to continue this practice with pleasure which is also beneficial for their physical fitness. At the end of the practice, stretching was done and the study ended with a breathing exercise. For post-test measurement at the end of 8 weeks, the "Chair-Stand", "8-Foot Up-And-Go" and "Chair Sit-And-Reach" tests in the Senior Fitness Test (SFT) protocol, as well as the "Geriatric Depression Scale" were applied. During the studies conducted with the experimental group, no application was administered to the control group.

Statistical analysis

Data analysis was done in SPSS (Version 20). Shapiro-Wilk was used to determine whether the data showed normal distribution, while independent t-tests were used for intergroup comparisons, and paired t-tests or their non-parametric equivalents were used for pre-posttest comparisons. The relationship between variables was evaluated with Pearson correlation or its nonparametric equivalent, and Type 1 error was accepted as $p<0.05$.

Ethical considerations

Muğla Sıtkı Koçman University, Medicine and Health Sciences Ethics Committee-2 (Sports-Health) Decision: Decision number: 2023/230016 /54

RESULTS

Table 1 includes descriptive analyses.

Table 1. Descriptive information.

n	Min.–Max.	Mean±SD
Age (34)	60–83	69±5.61
Height (34)	1.58–1.88	1.71±0.068
Body weight (34)	65–102	80.7±0.083

SD=Standard deviation.

Considering Table 2, it is seen that the variables show normal distribution according to the Shapiro-Wilk test results of the experimental and control groups.

Table 2. Normal distribution analysis of experimental and control groups with Shapiro-Wilk test.

Variables	Group	Statistical	p
Chair-Stand Test	Experimental	0.940	0.315
	Control	0.923	0.165
8 foot Up-and-Go Test	Experimental	0.957	0.584
	Control	0.923	0.165
Chair Sit-and-Reach Test	Experimental	0.957	0.584
	Control	0.975	0.895
GDS Pre-test total	Experimental	0.902	0.720
	Control	0.918	0.135

Table 3. Experimental and control group pre-test independent t-test result.

Variables	Expmental Group X̄±S	Control Group X̄±S	t	p
Chair-Stand Test	10.52±2.67	10.23±1.75	0.380	0.707
8 foot Up-and-Go Test	8.30±1.42	8.77±1.93	-0.806	0.427
Chair Sit-and-Reach Test	15.05±12.6	12.23±8.79	-0.756	0.456
GDS Pre-test total	4.70±1.99	3.76 ±1.88	0.566	0.167

Considering Table 3, it appears that there were no significant differences between the pre-test independent t-test results of the participants in the experimental and control groups, and Chair-Stand Test, 8-Foot Up-and-Go Test, Chair Sit-and-Reach Test, Geriatric Depression Scale, pre-test total and the pre-test measurements ($p>0.05$).
As Table 4 was evaluated, a significant differences ($p<0.01$) were found between the paired t-test results, pre-test and post-test Chair-Stand Test, 8-Foot Up-and-Go test, Chair Sit-and-Reach test, Geriatric Depression Scale score averages of the participants in the experimental group.
Considering Table 5, it was seen that there were no significant differences ($p>0.05$) between the paired t-test results of the participants in the control group, the pre-test and post-test Chair-Stand Test, 8-Foot Up-and-Go test, Chair Sit-and-Reach test, Geriatric Depression Scale mean scores of the participants in the control group($p>0.05$).

Table 4. Experimental group pre-post test paired t-test results (n:17).

Variables	Pre-test (X̄±S)	Post-test (X̄±S)	t	p
Chair-Stand Test	10.52±2.67	12.17±2.83	-3.45	**0.003***
8 foot Up-and Go Test	8.30±1.42	6.60±1.07	4.79	**0.000****
Chair Sit and Reach Test	-15.05±12.65	-9.00±11.74	-4.44	**0.000****
GDS	4.70±1.99	0.00±0.00	9.73	**0.000****

*p<0.05 **p<0.01

Table 5. Control group pre-post test paired t-test results (n:17).

Variables	Pre-test (X̄±S)	Post-test (X̄±S)	t	p
Sit-Stand Test	10.23±1.75	10.00±1.45	0.940	0.361
8 foot Up-and Go Test	8.77±1.93	9.12±1.78	-2.94	0.009
Chair Sit and Reach Test	-12.23±8.79	-15.05 ±7.46	1.82	0.087
GDS	3.76±1.88	5.17±1.94	-6.68	0.000

*p<0.05 **p<0.01

Table 6. Pearson correlation analysis results between parameters.

	M	SD	1	2	3	4	5	6	7
Sit-Stand Test	11.0882	2.4786	1						
8 foot Up-and Go Test	7.9685	2.0025	-0.585**	1					
Chair Sit and Reach Test	-12.0294	10.1667	0.492**	-0.604**	1				
GDSÖ	2.5882	2.9554	-0.487**	0.713**	-0.297	1			
Age	69.1105	5.6186	0.392**	-0.143	0.085	-0.084	1		
Height	1.7194	0.0685	-0.053	0.047	0.13	0.087	0.339	1	
Body Weight	80.7882	8.3333	0.007	0.006	-0.044	-0.086	0.275	0.500**	1

*p<0.05 **p<0.01 Pearson correlation test

Table 6 demonstrates the correlation analyzes between the variables. A positive correlation was found between the Chair-Stand variable and the 8-Foot Up-and-Go test, Chair Sit-and-Reach test, Geriatric Depression Scale and age variable. A negative correlation was detected between the 8-Foot Up-and-Go test variable and the Chair Sit-and-Reach test, while a positive correlation was found with the Geriatric Depression Scale. Moreover, a positive correlation was found between height and body weight.

DISCUSSION

Although it is known that sports contribute to health and comfortable living, it has been observed that participation in active sports decreases in older ages. Eventhough it is not fully understood why some elderly people do not continue to do sports, for some, sports play an important role in later ages and are thought to contribute to improved health and well-being (Stenner, 2020). Physical activity and exercise are critical in preventing cardiovascular diseases, diabetes, stroke, osteoporosis and some types of cancer that occur with aging, as well as falls that can lead to serious injuries or even death. Because activity contributes greatly to maintaining independence and improving the quality of life in the elderly (Özmen and Contarlı, 2023).

Physical activity has many benefits in terms of physical, psychological and social health. The studies have shown that lack of physical activity constitutes a major risk factor for health problems in aging adults. Hence, as a primary means of prevention from chronic diseases, it is necessary to identify appropriate physical activity options for aging adults and encourage them to be more physically active (Penedo, 2005).

Global trends show that physical activity levels decrease with advancing age (Hallal et al., 2012). It was stated that lack of physical activity constitutes a major risk factor for health problems in aging adults.

Walking football appears to be an important way to involve adults in sports and make them active while they are alive (Sivaramakrishnan, 2023). The purpose of walking football studies, which cause positive improvements in the health of adult men and women, is to direct them to physical activity (Hunt et al., 2014). Physical activity has various benefits in terms of physical, psychological and social health. Accordingly, a significant difference was found between the pre-test and post-test measurements of selected PFT measurements and GDS measurements of volunteer participants of the 8-week walking football protocol applied in the study, while no change was observed in the pre-post test measurement results of the control group. It is seen that walking football, which is beneficial for the development of skills as well as the self-confidence of playing football (Taylor and Pringle, 2022), is important in providing older adults with the opportunity to move. Sivaramakrishnan et al. (2023)'s study provides insight into the complex interaction of adults' intentions to participate in walking sports related to the personal psychosocial program and environmental determinants. In their study, Harper et al. (2019) aimed to profile physical, physiological and biomechanical responses, and stated that the long-term positive benefits of walking football, especially in terms of bone health, cardiovascular fitness, social and mental health, should be clarified.

The scarcity of experimental studies comparing the older adult population with the control group increases the importance of this study. Due to the benefits of this sport which will allow older individuals to be active, need to be revealed through more studies.

Recently it has been focused on maintaining stable and long-term participation in sports with walking football, a sport adapted from football, with the aim of improving health and well-being, especially (McEwan et al. 2015).

It has been reported that this sport, which is a slow type of football, can be done safely due to the low incidence of traumatic events.

Arnold et al. (2015) did not observe any change in blood lactate level in the 12-week walking football study, while they found non-significant differences in the medium effect in terms of decrease in body mass, increase in lean body mass and decrease in body mass index. Harper et al. (2019) concluded in their study that walking football is a moderate to vigorous intensity activity, and that more studies are needed on its long-term benefits in terms of bone health, cardiovascular fitness and social mental health. Madsen et al. (2021) concluded that walking football for elderly men and women causes higher heart rate, and more speed and distance due to the nature of the work compared to just walking. Carthy et al. (2017) reported that in their study when volunteers engage in physical activity, they have the opportunity to move more, and socialization increases. Heil, Newton, and Salle (2023) stated that walking football applied in a research group consisting of Southeast Asian women was of sufficient intensity to create positive changes in both cardiovascular and metabolic condition. Again, in the study conducted by Krustrup et al. (2018), the effects of walking football on women's fitness and health were evaluated.

In another study conducted to evaluate walking football in middle-aged and elderly male individuals, promising results were found on body composition, aerobic condition and blood pressure (BP) (Barbosa et al. 2020), and this is parallel to our study. Because when the pre-post test measurements of the experimental group were compared, the significant differences were found in lower extremity strength and flexibility, agility and dynamic balance tests. Furthermore, Taylor and Pringle (2022) stated that in their study playing walking football is effective in improving skills as well as providing distraction, success and confidence.

Despite the fact that the studies on walking football are not common in our country, older adults are encouraged to be active by walking. Because it appears to be the easiest, cheapest and safest way to increase fitness in the elderly is walking (Soygüden, 2015). Song and Doris (2019), concluded that group-based, 16-week moderate-intensity aerobic walking exercises improved cognitive functions, and had positive effects on depressive mood and low sleep quality in individuals who aged 60 and over with mild cognitive impairment and revealed that the importance of walking sports in this study. The positive difference in geriatric depression measurement results in the pre-post test measurements of the experimental group of our study suggests that this sport is an important option for activity in elderly male individuals.

CONCLUSION

As a result, in our study, it was observed that there was a significant difference ($p<0.01$) between the Chair Sit-and-Reach, chair-stand, 8-foot up-and-go and Geriatric Depression Scale pre-post test results of the volunteer participants in the experimental group, and that there was no difference in the pre-post test measurement results of all variables in the control group participants. According to Pearson correlation analysis, it was observed that the chair-stand variable had a positive relationship with 8-foot up-and-go, Chair Sit-and-Reach Test and Geriatric Depression and the age of the participants, and that the 8-foot up-and-go variable has a positive relationship with geriatric depression. Therefore, it can be said that walking football has a positive effect on elderly men both physically and psychologically. It is a matter of curiosity what kind of differences the walking football exercises planned for older female individuals will cause in terms of physical and psychological aspects, and this can be expressed as a suggestion of the study.

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Conflict of Interest

The authordeclare no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Author Contributions

Plan, design: ÜEY, ÖS. **Material, methods and data collection:** ÜEY. **Data analysis and comments:** ÜEY. **Writing and corrections:** ÜEY, ÖS.

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Ethical considerations

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REFERENCES

Arnold, J. T., Bruce-Low, S., & Sammut, L. (2015). The impact of 12 weeks walking football on health and fitness in males over 50 years of age. *British Medical Journal, Open Sport & Exercise Medicine*, *1*(1), bmjsem-2015.https://doi.org/10.1136/bmjsem-2015-000048

Arslan S. (2019). Yaşlılarda meydana gelen fizyolojik psikolojik ve sosyolojik değişiklikler. İçinde: Aylaz R. (editör). Yaşlı sağlığı ve hemşirelik bakım.Malatya, İnönü Üniversitesi Yayınevi, 65-84.https://doi.org/10.38108/ouhcd.752133

Barbosa, A., Brito, J., Costa, J., Figueiredo, P., Seabra, A., & Mendes, R. (2020). Feasibility and safety of a walking football program in middle-aged and older men with type 2 diabetes. *Progress in Cardiovascular Diseases*, *63*(6), 786-791. https://doi.org/10.1016/j.pcad.2020.06.014

Burke W. J., Roccaforte W. H., & Wengel S. P. (1991).The short form of the Geriatric Depression Scale: a comparison with the 30-item form. *Journal Geriatr Psychiatry Neurology*, 4, 173–8. https://doi.org/10.1177/089198879100400310

Carthy, A., Byrne, J., & Barrie, J. (2017). A Whole New Ballgame: Does participating in a walking football club lead to increased levels of social engagement? Conference Papers. *Research Centre for Psychology Education and*

Emotional Intelligence. https://doi.org/10.13140/RG.2.2.33514.82884

Durmaz, B., Soysal, P., Ellidokuz, H., & Isik, A. T. (2018). Validity and reliability of geriatric depression scale-15 (short form) in Turkish older adults. *Northern Clinics of Istanbul*, *5*(3), 216–220. https://doi.org/10.14744/nci.2017.85047

Eastman, J. K., & Iyer, R. (2004). The elderly's uses and attitudes towards the Internet. *Journal of Consumer Marketing*, *21* (3), 208-220. http://dx.doi.org/10.1108/07363760410534759

DSÖ. (2021).Ageing and health. World health organization. https://www.who.int/newsroom/factsheets/detail/ageing-and-health Date of access:12.04.2023

DSÖ. (2015). World report on ageing and health:World healthorganization. https://www.who.int/publications/i/item/978924156504. Date of access: 23.05.2023

Hallal P. C., Andersen L. B., Bull F.C., Guthold R, Haskell W, & Ekelund U. (2012). Global physical activity levels: surveillance progress, pitfalls, and prospects. *Lancet*. *380*(9838): 247-257. https://doi.org/10.1016/s0140-6736(12)60646-1

Harper, L. D., Field, A., Corr, L. D., & Naughton, R. J. (2019). The physiological, physical, and biomechanical demands of walking football: Implications for exercise prescription and future research in older adults. *Journal of Aging and Physical Activity*, *28*(3), 478-488. https://doi.org/10.1123/japa.2019-0330

Hunt, K., Wyke, S., Gray, CM., Anderson, A.S., Brady, A., Bunn, C., Donnan, PT., Fenwick, E., Grieve, E., Leishman, J., Miller, E., Mutrie, N., Rauchhaus, P., White, A., & Treweek, S. (2014). A gender-sensitised weight loss and healthy living programme for overweight and obese men delivered by Scottish Premier League football clubs (FFIT): A pragmatic randomised controlled. Open Access article distributed under the terms of CC BY-NC-ND. by *Elsevier* Ltd. https://doi.org/10.1016/s0140-6736(13)62420-4

Knapik, J. J., Meredith, CN., Jones, BH., Suek, L., Young, VR., & Evans, WJ. (1985). Influence of fasting on carbohydrate and fat metabolism during rest and exercise in men. *Journal Applied Physiology*. https://doi.org/10.1152/jappl.1988.64.5.1923

Krustrup, P., Williams, C. A., Mohr, M., Hansen, P. R., Helge, E. W., Elbe, A. M., & Brito, J. (2018). The "football is medicine" platform-scientific evidence, large-scale implementation of evidence-based concepts and future perspectives. *Scandinavian Journal of Medicine & Science in Sports*, *28*, 3-7. https://doi.org/10.1111/sms.13220

Madsen, M., Krustrup, P., & Larsen, M. N. (2021). Exercise intensity during walking football for men and women aged 60+ in comparison to traditional small-sided football–a pilot study. *Managing Sport and Leisure*, *26*(4), 259-267. http://dx.doi.org/10.1080/23750472.2020.1762508

McBain, T., & Broom, D. (2022). O2-8 Effects of a 12-week walking football intervention on cardiovascular disease risk factors in an older adult population: a randomised controlled trial in the UK, *European Journal of Public Health*, Volume 32, Issue Supplement_2, September, ckac094.016. https://doi.org/10.1093%2Feurpub%2Fckac094.016

McEwan, G., Buchan, D., Cowan, D., Arthur, R., Sanderson, M., & Macrae, E. (2019). Recruiting older men to walking football: A pilot feasibility study. *Explore*, 15(3), 206-214. https://doi.org/10.1016/j.explore.2018.12.001

Özmen, T., & Contarlı., N. (2023). Yaşlılarda Fiziksel Aktivite ve Sağlık. *Unika Sağlık Bilimleri Dergisi*. *3*(1), 452-459.

Rikli, R. E., & Jones, C. J. (2001). *Senior fitness test manual*. Champaign, IL: Human Kinetics.

Salle, D. D. A., Newton, R. U., & Heil, D. P. (2023). The Walking Cadence Threshold Associated With A Moderate Metabolic Intensity During Competitive Walking Football: 2554. *Medicine & Science in Sports & Exercise*, *55*(9S), 844-844. http://dx.doi.org/10.1249/01.mss.0000987784.30473.42

Sarı E. (2013). Edirne Merkezinde Ev Ortamında Yaşayan 65 Yaş ve Üstü Yaşlılarda Yaşam Kalitesi. Sağlık Bilimleri Enstitüsü, Hemşirelik Anabilim Dalı. Yüksek Lisans Tezi. Trakya Üniversitesi.

Sivaramakrishnan, H., Quested, E., Cheval, B., Thøgersen-Ntoumani, C., Gucciardi, D. F., & Ntoumanis, N. (2023). Predictors of intentions of adults over 35 years to participate in walking sport programs: A social-ecological mixed-methods approach. *Scandinavian Journal of Medicine & Science in Sports*, *33*(8), 1412–1430. https://doi.org/10.1111/sms.14368

Song, D., & Doris, S. F. (2019). Effects of a moderate-intensity aerobic exercise programme on the cognitivefunction and quality of life of community-dwelling elderly people with mild cognitive impairment: Arandomised controlled trial. *International Journal Nursing Studies*, *93*, 97-105. https://doi.org/10.1016/j.ijnurstu.2019.02.019

Soygüden, A., & Cerit, E. (2015). Yaşlılar İçin Egzersiz Uygulamalarının Önemi, *Hitit Üniversitesi Sosyal Bilimler Enstitüsü Dergisi.* *8*(1), 197-224. https://doi.org/10.17218/husbed.58321

Stenner, B. J., Buckley, J. D., & Mosewich, A. D. (2020). Reasons why older adults play sport: A systematic review. *Journal of Sport and Health Science*, *9*(6), 530–541. https://doi.org/10.1016/j.jshs.2019.11.003

Taylor, D., & Pringle, A. (2022). Investigating the effect of walking football on the mental and social wellbeing of Men. *Soccer & Society*, *23*(7), 805-820. https://doi.org/10.1080/14660970.2021.1967933

UN-DESA. (2017). World population aging 2017 – Highlights (ST/ESA/SER.A/397) (P. D. Department of Economic and Social Affairs, Trans.): United Nations.

Penedo, F. J., & Dahn, JR. (2005). Exercise and well-being: a review of mental and physical health benefits associated with physical activity. *Curr Opin Psychiatry*. *18*(2): 189-193. https://doi.org/10.1097/00001504-200503000-00013

Zainudin, S. B., Salle, D. D. A., & Aziz, A. R. (2022). Walking Football During Ramadan Fasting for Cardiometabolic and Psychological Health Benefits to the Physically Challenged and Aged Populations. *Frontiers in Nutrition*, *8*, 779863. https://doi.org/10.3389/fnut.2021.779863

White, R. L., McInerney, A., Young, C., Elston, R., Dogramaci, S. N., Fitzsimons, L., & Bennie, A. (2021). Understanding Participant Experiences of Walking Football in Australia. Western Sydney University. Penrith, N.S.W. https://hdl.handle.net/1959.7/uws:63005

Zorba, E., & Saygın, Ö. (2009). *Physical activity and physical fitness.* Inceler offset.