Journal of **S**ports for **A**ll and **R**ecreation
Herkes için Spor ve Rekreasyon Dergisi

2024, 6(4)
Araştırma Makalesi / Research Article

e-ISSN: 2687-6027

The Effect of Exercise on Life Engagement and Subjective Vitality: An Intercultural Study During The Covid-19 Pandemic

Egzersizin Yaşam Bağlılığı ve Öznel Zindelik Üzerine Etkisi: Covid-19 Pandemi Döneminde Kültürlerarası Bir Araştırma

Musab Çağın[1], *Ahmet Dönmez[2], Cengiz Baykara[3], Salim İbrahim Onbaşı[4]

[1] Gazi Üniversitesi, Spor Bilimleri Fakültesi, musabcagin@gazi.edu.tr, 0000-0001-8882-5506
[2] Alanya Alaaddin Keykubat Üniversitesi, Spor Bilimleri Fakültesi, ahmet.donmez@alanya.edu.tr, 0000-0001-6754-4369
[3] Millî Eğitim Bakanlığı, cengizbaykara@outlook.com.tr, 0000-0002-1817-7109
[4] Purdue Üniversitesi, Sağlık ve Kinesyoloji Bölümü, sonbasi@purdue.edu, 0000-0001-6924-5100

ABSTRACT

The aim of this study was to reveal the effect of exercise on life engagement and subjective well-being during the COVID-19 pandemic. A total of 1224 individuals (age= 30.15±9.63), 438 females (age= 29.20±9.57) and 786 males (age= 30.68±9.63) from Turkey, the United States of America, the United Kingdom, Spain, Italy, Canada, Brazil and India participated in the study, which was conducted using a survey model. Of the participants, 483 were non-exercises and 741 were exercisers. "Personal Information Form", "Life Engagement Scale", "Subjective Vitality Scale" were used as data collection tools. Data were analyzed using descriptive statistics and one-way MANOVA. According to the results of the study, it was revealed that there were significant differences in the life engagement and subjective vitality scores of those who exercised compared to those who did not exercise, and there was a significant difference in life engagement and subjective vitality scores in terms of countries (p<.05). Moreover, when the results were analyzed in terms of the country*exercise interaction, similarly significant differences were found (p<.05). The results of the study indicated that exercise participation positively affected life engagement and subjective vitality.

Keywords: Covid-19 Pandemic, Exercise, Life Engagement, Subjective Vitality, Cross-Cultural Research.

ÖZET

Bu araştırmada amaç covid-19 pandemi döneminde egzersizin yaşam bağlılığı ve öznel zindelik üzerine etkisini ortaya koymaktır. Tarama modeli benimsenerek yürütülen araştırmaya Türkiye, Amerika Birleşik Devletleri, İngiltere, İspanya, İtalya, Kanada, Brezilya ve Hindistan ülkelerinden 438'i kadın (yaş= 29.20±9.57) 786'sı erkek (yaş= 30.68±9.63) toplam 1224 (yaş= 30.15±9.63) birey katılım göstermiştir. Katılımcıların 483'ü egzersiz yapmayan, 741'i ise egzersiz yapanlardan oluşmaktadır. Veri toplama araçları olarak "Kişisel Bilgi Formu", "Yaşam Bağlılığı Ölçeği", "Öznel Zindelik Ölçeği" kullanılmıştır. Veriler tanımlayıcı istatistikler ve tek yönlü MANOVA kullanılarak analiz edilmiştir. Araştırma sonuçlarına göre egzersiz yapanların yaşam bağlılığı ve öznel zindelik skorlarında egzersiz yapmayanlara göre anlamlı farklılıklar olduğu, ülkeler açısından bakıldığında yaşam bağlılığı ve öznel zindelik skorlarında anlamlı farklılık olduğu ortaya konulmuştur (p<.05). Dahası ülke*egzersiz etkileşimi açısından sonuçlara bakıldığında benzer şekilde anlamlı farklılıklar olduğu tespit edilmiştir (p<.05). Araştırmada ortaya konulan sonuçlar egzersize katılımın yaşam bağlılığı ve öznel zindeliği olumlu yönde etkilediğini işaret etmiştir.

Anahtar Kelimeler: Covid-19 Pandemisi, Egzersiz, Yaşam Bağlılığı, Öznel Zindelik, Kültürlerarası Araştırma.

Citation: Çağın, M., Dönmez, A., Baykara, C. & Onbaşı, S.İ. (2024). Egzersizin Yaşam Bağlılığı ve Öznel Zindelik Üzerine Etkisi: Covid-19 Pandemi Döneminde Kültürlerarası Bir Araştırma, *Herkes için Spor ve Rekreasyon Dergisi*, *6*(4), 395-403.

Gönderme Tarihi/Received Date: 19.07.2024

Kabul Tarihi/Accepted Date: 22.11.2024

Yayımlanma Tarihi/Published Online: 30.12.2024

https://doi.org/10.56639/jsar.1519370

**Corresponding author: ahmet.donmez@alanya.edu.tr*

INTRODUCTION

The ideals that individuals choose and strive to achieve shape their current behavior (Adler, 2014). Goals that are valuable to the individual contribute to the consolidation of goals that play an important role in the development of life engagement. Individuals who adhere to the attainable goals they set meet their psychological needs, such as making sense of life, and increase their life satisfaction during the process of reaching their goals (İlhan & Özbay, 2010; Scheier et al., 2006). Even in daily routine tasks that are far behind metacognitive goals, an individual's setting a goal will change the meaning of the process (Uğur & Akın, 2015; Scheier et al., 2006). Goals that help individuals add meaning to their personal development and life also play a protective role against psychological problems (Eryılmaz, 2012; McKnight & Kashdan, 2009). If we give an example of this situation from the Covid-19 process; When this process, which had to stay at home due to the curfew during the Covid-19 epidemic, is spent doing exercises at home in order to have a healthier and fitter body, this process of staying at home may be perceived as more valuable than a boring house arrest because it serves a purpose. This purposefulness provides an individual with a reason to live (Yüksel, 2013; De Klerk, Boshoff, & Wyk, 2009). Therefore, life engagement is not only a dynamic to hold on to life, but it can also reach the dimension of making a difference in this limited life (Tazegül, 2017). In addition, studies have shown that life engagement is positively related to positive thinking (Tazegül, 2018), personality traits (Tazegül, 2017) and life satisfaction (Sakarya & Dilmaç, 2020). Another variable addressed in the study is subjective well-being.

Subjective well-being (happiness) is among the most important research and study areas of positive psychology. Opinions on this subject date back to ancient philosophers. Aristotle defines happiness as "the meaning and purpose of life, the whole purpose and outcome of human existence" (Lyubomirsky, 2007). The term subjective vitality based on self-regulation theory; includes the concepts of feeling energetic, fit and alive (Deci & Ryan, 2000). Although subjective well-being generally refers to the individual's state of mental well-being, it also includes physical well-being. In addition, subjective vitality, which is an important determinant of physical and mental health, is important for a healthy life (Sivri, 2019). Studies have shown that people with a high level of subjective vitality not only feel good, but are more successful in interpersonal relationships (Diener & Seligman, 2002), their life energy and productivity increase, their immune systems are strengthened, they are more productive in business life and their life spans are extended (Lyubomirsky, King & Diener, 2005). In addition, the concept of subjective vitality is related negatively with depressive symptoms (Bostic, Rubio & Hood, 2000), psychological sadness (Salama-Younes, 2011), physical pain

(Nix, Ryan, Manly & Deci, 1999), coronary heart disease (Kubzansky & Thurston, 2007), sleep disturbance and somatic diseases (Stewart, Hays & Ware, 1992) and headaches (Ryan & Frederick, 1997); It is positively related to motivation, life satisfaction, self-esteem (Deci & Ryan, 1991), extraversion and autonomy (Ryan & Frederic, 1997). The effects of the Covid-19 pandemic on life engagement and subjective well-being depend on a variety of factors, such as the circumstances in which the individual lives, the support systems they have, and personal resilience. However, in general, we can say that many people have faced emotional and psychological challenges during the pandemic and it is important to be in solidarity as a society to overcome these challenges.

The Covid-19 epidemic, which affects the whole world, causes various physiological and psychological disorders due to both inactivity and increasing the time spent sedentary (Fernandes, 2020; Ansar & Ahmadi-Yousefabad, 2020). Recent studies show that the conditions of the Covid-19 epidemic (mask, distance, isolation, fear, uncertainty, etc.) increase stress-related symptoms and this situation negatively affects the lives of individuals (Duan & Zhu, 2020; Giallonardo et al., 2020; Satici, Saricali, Satici & Griffiths, 2020; Roy, Tripathy, Kar, Sharma, Verma & Kaushal, 2020; Liu, Zhang, Wong & Hyun, 2020; Pérez-Fuentes, Jurado, Martínez & Linares, 2020). The size of the area covered by the Covid-19 epidemic and the mental and physical damage it causes to individuals have become an important research topic in order to determine measures to protect health (Giallonardo et al., 2020; Liu et al., 2020; Satici et al., 2020). In protecting health, it is known that exercise is an important protective shield (Cerea, Pecunioso, Casali, Moro, Paoli & Ghisi, 2022; Chen, 2016; Zorba, 2014; Ersoy, 2004) and increases the immunological response of the body (Woolcott & Bergman, 2018). Exercise and physical activity; It can have positive effects on prevention of chronic diseases, reduction of stress, anxiety and depression and formation of psychological resilience (Bezner, Franklin, Lloyd & Crixell, 2020; Van Dongen, Haveman-Nies, Doets, Dorhout & de Groot, 2020; Rodrigues, Faustino, Santos, Teixeira, Cid & Monteiro, 2022). In this context, exercise and physical activity have an important place in coping with the negative psychological effects brought by the quarantine and isolation processes caused by the Covid-19 epidemic (Yarizadeh et al., 2020). The psychological reflections of the epidemic, which has affected the whole world, in different countries has been a subject worth investigating. In addition, the effect of exercise on different psychological structures may contribute to directing and encouraging people to exercise more during the epidemic. Moreover, such a study is needed since it would be interesting to consider exercise, life engagement and subjective vitality together during the epidemic period in the current literature. In this research, it is aimed to examine the effect of exercise on life engagement and subjective vitality in different countries during the Covid-19 period based on the information given and in order to contribute to the literature.

METHOD

Research Model: This research, which is conducted to determine the effect of exercise on engagement to life and subjective vitality during the Covid-19 pandemic period, is carried out using the "screening model". According to Karasar, survey model is “research approaches that aim to describe a past or present situation as it is. The event, individual or object that is the subject of the research is tried to be defined in its own conditions and as it is. No effort is made to change or influence them in any way” (Karasar, 2018, p. 109). In this research, the survey model was used to portray the current situation and to try to understand what happened during the covid-19 outbreak as it happened.

Research Group: While determining the countries where the research will be conducted, the confirmed case rates of the European Center for Disease Prevention and Control (ECDC) are taken into account and care is taken to ensure that the rate of increase of the coronavirus is as similar as possible during the data collection period. Since it is difficult to collect data from all of these selected countries and some countries are not self-sacrificing in sharing data, the research group consisted of those who could be reached from these countries. These countries are Turkey, United States of America, United Kingdom, Spain, Italy, Canada, Brazil and India. The sample group consists of 438 female (age= 29.20±9.57)) and 786 male (age= 30.68±9.63) total 1224 (age= 30.15±9.63) participants living in these selected countries. Of the participants, 483 do not exercise and 741 do exercise. Individuals who exercise at least 3 days a week (Jeong et al., 2017; Demirel, Kayıhan, Özmert & Doğan, 2014), are accepted as regular exercisers as criteria for exercising. While selecting the research group, convenient sampling method is preferred.

Table 1. Distribution of participants by country and gender

Countries	Gender	n	%
Turkey	Male	87	58,4
	Female	62	41,6
United States	Male	135	64,0
	Female	76	36,0
Italy	Male	125	70,2
	Female	53	29,8
United Kingdom	Male	74	60,2
	Female	49	39,8
Spain	Male	79	62,7
	Female	47	37,3
Brazil	Male	139	70,2
	Female	59	29,8
India	Male	107	67,7
	Female	51	32,3
Canada	Male	40	49,4
	Female	41	50,6

Table 1 shows the distribution of the participants by country. 87 male and 62 female from Turkey; 135 male, 76 female from the United States; 125 men, 53 female from Italy; 74 male, 49 female from the UK; 79 men, 47 female from Spain; 139 male, 59 female from Brazil; 107 male and 51 female from India and 40 male and 41 female from Canada participated.

Table 2. Distribution of the participants according to their exercise status

Countries	Exercise Situations	n	%
Turkey	Not doing exercise	69	46,3
	Doing exercise	80	53,7
United States	Not doing exercise	64	30,3
	Doing exercise	147	69,7
Italy	Not doing exercise	72	40,4
	Doing exercise	106	59,6
United Kingdom	Not doing exercise	51	41,5
	Doing exercise	72	58,5
Spain	Not doing exercise	41	32,5
	Doing exercise	85	67,5
Brazil	Not doing exercise	116	58,6
	Doing exercise	82	41,4
India	Not doing exercise	38	24,1
	Doing exercise	120	75,9
Canada	Not doing exercise	32	39,5
	Doing exercise	49	60,5

Table 2 shows the exercise status of the participants by country. 69 who do not exercise, 80 who do exercise from Turkey; 64 who do not exercise, 147 who do exercise from United States; 72 who do not exercise, 106 who do exercise from Italy; 51 who do not exercise, 72 who do exercise from United Kingdom; 41 who do not exercise, 85 who do exercise from Spain; 116 who do not exercise and 82 who do exercise from Brazil; 38 who do not exercise, 120 who do exercise from India, and 32 who do not exercise, 49 who do exercise from Canada participated to the research.

Figure 1 and Figure 2 below show the confirmed case rates of countries between April 1 and May 31.

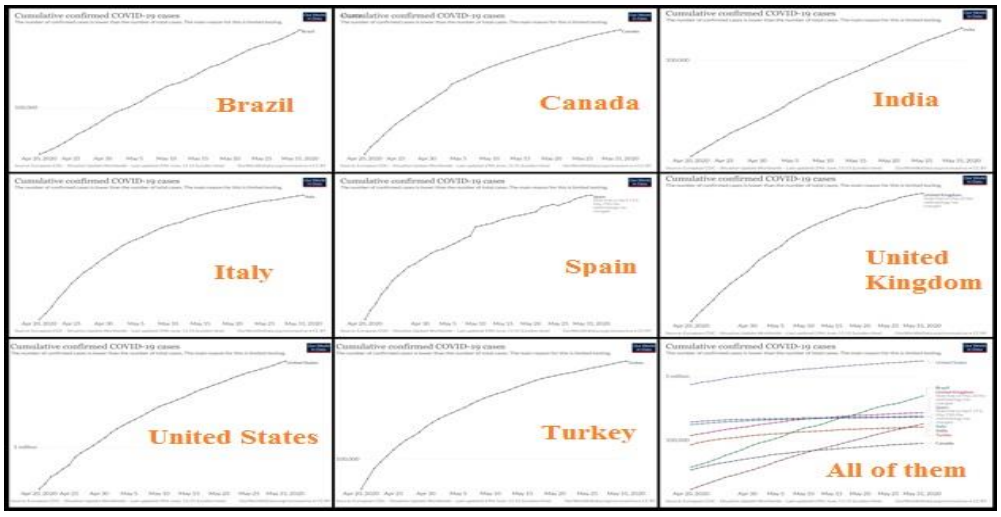

Figure 1. Graph of coronavirus change from April 1 to May 31, 2020 in selected countries URL-1: https://ourworldindata.org/

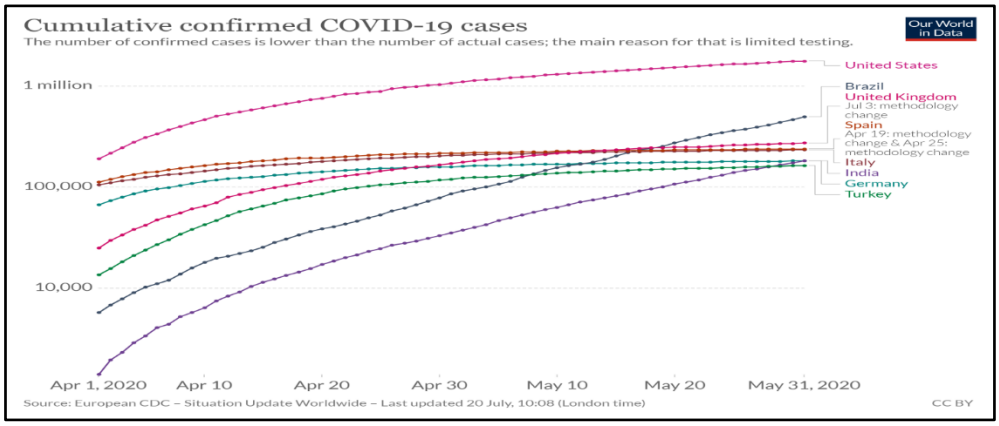

Figure 2. Graph of coronavirus change from April 1 to May 31, 2020 in selected countries, URL-1: https://ourworldindata.org/

Data Collection Tools: Within the scope of the research, “Personal Information Form”, “Life Engagement” and “Subjective Vitality” scales are used as measurement tools. Detailed and comprehensive information about the measurement tools is given below.

Personal Information Form: In order to determine the demographic information of the participants in the study, a "Personal Information Form" is prepared by the researchers. In the personal information form, it is aimed to reach information such as age, gender, the day and time of exercise before the pandemic, the status of exercise during the pandemic process, the day and hour of exercise during the pandemic period.

The Life Engagement Test: The Life Engagement Test developed by Scheier et al. (2006) is used to determine the participants’ life engagement. The measurement tool consists of 6 items and one dimension. The scale has a rating of 5 (I strongly disagree “1”, I completely agree “5”). Items 1, 3 and 5 in the scale are reverse coded. An increase in the scores obtained from the measurement tool indicates a high level of life engagement. The skewness and kurtosis, reliability and mean values of the measurement tool are presented in Table 3.

Table 3. Results of the life engagement scale

	n	Skewness	Kurtosis	Croncbach α	$\overline{X} \pm SS$
Turkey	149	-,89	,44	.85	26,15±3,66
United States	211	-,12	-,42	.81	22,05±4,62
Italy	178	-,28	-,31	.79	22,59±4,12
United Kingdom	123	-,63	-,09	.87	21,75±5,18
Spain	126	-,21	-,51	.77	22,75±4,16
Brazil	198	-,40	-,13	.80	22,40±4,65
India	158	-,04	-,75	.67	21,67±3,83
Canada	81	-,64	,15	.73	22,92±3,99

When the analysis results in Table 3 are examined; It has been determined that the skewness and kurtosis values of the life engagement scale vary between -2…..+2. In addition, it is understood that the Cronbach Alpha coefficients for the scale dimensions vary between .85 and .67, and these results are quite reliable according to Karagöz (2017, p.26).

Subjective Vitality Scale: The "Subjective Vitality Scale" developed by Ryan and Frederick (1997) is used to determine the subjective vitality of the participants. The measurement tool consists of 7 items and one dimension. The scale has a rating of 7 (strongly disagree “1”, strongly agree “7”). The second item of the scale is reverse coded. High scores obtained from the scale indicate that the individual's subjective vitality level is high. The skewness and kurtosis, reliability and mean values of the measurement tool are presented in Table 4.

Table 4. Results of the subjective vitality scale

	n	Skewness	Kurtosis	Croncbach α	$\overline{X} \pm SS$
Turkey	149	-,81	,21	.90	36,60±8,16
United States	211	-,48	,74	.78	33,61±7,21
Italy	178	-,41	-,16	.89	33,29±8,16
United Kingdom	123	-,51	-,54	.92	30,38±9,68
Spain	126	-,76	,24	.85	33,60±8,06
Brazil	198	-,17	,62	.90	30,89±9,66
India	158	-1,24	1,90	.71	36,24±5,75
Canada	81	-,55	-,62	.81	33,62±7,34

When the analysis results in Table 4 are examined; It is determined that the skewness and kurtosis values of the subjective vitality scale varied between -2…..+2. In addition, it is understood that the Cronbach Alpha coefficients for the scale dimensions vary between .90 and .71, and these results are quite reliable according to Karagöz (2017, p.26).

Data Collection: In order to collect data in the study, first of all, the countries planned to be included in the study were tried to be determined. In this framework, while determining the countries where the research will be conducted, the confirmed case rates of the European Centre for Disease Prevention and Control (ECDC) between May 1 and May 31, 2020 were taken into consideration and attention was paid to ensure that the rate of increase in case rates on the relevant dates were similar. Data were collected in July 2020 due to the prolonged duration of the permissions requested from the relevant institutions and organizations during the data collection process. The research data were collected from individuals living in Turkey, the United States of America, the United Kingdom, Spain, Italy, Canada, Brazil and India. The questions in the data collection tool were transferred to the online data collection system and the purpose of the research was written in this system and the voluntary participation consent form option was added to the system. After the participants read the purpose of the study, they were included in the study by selecting the voluntary consent form option. In addition, since the measurement tools had original English versions, the participants were asked

whether they knew the universally accepted English language in the data collection system and the data were obtained from the participants who knew English.

Analysis of Data: The collected data are checked and transferred to the SPSS package program and descriptive statistics are applied. After the descriptive statistics, the data are tested for normality. As a result of the statistical process, it is determined that the skewness and kurtosis values of the data are in the range of -2….+2. It can be stated that these determined values are suitable for normal distribution (George and Mallery, 2019, ss. 114-115). Descriptive statistics and one-way MANOVA analysis are applied to the data and the significance value is taken as.05.

Ethical Aspect of Research: Before collecting the research data, the necessary permissions are obtained in writing from the University of Applied Sciences Ethics Committee [E.5246/26428519/044]. In addition to ethical approval, all procedures in human studies are carried out in accordance with the ethical standards of the Declaration of Helsinki, which is the latest updated version.

RESULTS

Table 5. MANOVA results of life engagement and subjective vitality scores by country and exercise groups

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	p	Partial Eta Squared
Country	Life Engagement	2015,758	7	287,965	15,720	,001	,083
	Subjective Vitality	4320,223	7	617,175	10,053	,001	,055
Exercise Group	Life Engagement	251,664	1	251,664	13,738	,001	,011
	Subjective Vitality	3047,993	1	3047,993	49,647	,001	,039
Country * Exercise Group	Life Engagement	275,821	7	39,403	2,151	,036	,012
	Subjective Vitality	1620,011	7	231,430	3,770	,001	,021

Table 5 shows the MANOVA results regarding whether life engagement and subjective vitality differ according to countries, exercise status, and country exercise interaction. As a result of the MANOVA analysis, the main effect of the countries (Pillai's Trace=,150; F=14,030; p<.05, η^2=,075) the main effect of the exercise groups (Pillai's Trace=,040; F=25,427; p<.05, η^2= ,040) and country*exercise groups interaction (Pillai's Trace=,029; F=2,556; p<.05, η^2=,015) is found to be significant on life engagement and subjective vitality.

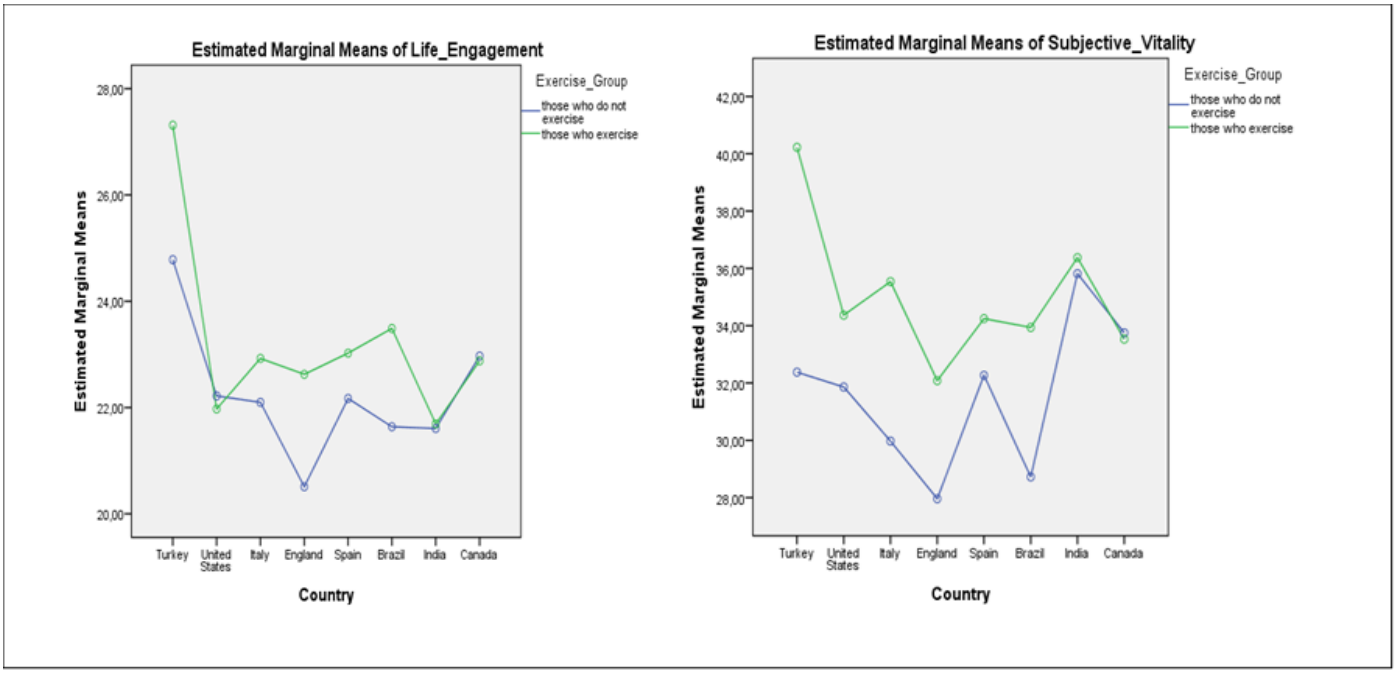

Figure 3. Graphical representation of Country*Exercise groups interaction

When Figure 3 is examined, the results of the country*exercise groups interaction are seen. According to the results of the analysis, it is determined that exercising positively affects life engagement in Turkey, Italy, United Kingdom, Spain, Brazil and India; In the United States and Canada, this positive effect is not detected. When examined in terms of subjective vitality, while a positive effect of exercise on the subjective vitality effect is found in Turkey, the United States of America, Italy, the United Kingdom, Spain, Brazil and India; In Canada, this positive effect could not be detected. When considering the differences between countries; The mean score of Turkey (=26.14±3.66) in Life Engagement is found to be significantly higher than United States (=22.05±4.62), Italy (= 22.59±4.12), United Kingdom (=21.75±5.17), Spain (=22.75±34.16), Brazil (=22.40±4.65), India (=21.67±3.83), and Canada

(=22.91±3.09). In Subjective Vitality, the mean score of Turkey (=36.59±8.16) is found to be significantly higher than United States (=33.61±7.20), Italy (=33.29±8.16), United Kingdom (=30.37±9.68), Spain (=33.60±8.06), Brazil (=30.88±9.66); The mean score of United States (=33.61±7.20) is found to be higher than United Kingdom (=30.37±9.68), and Brazil (=30.88±9.66); The mean score of Italy (=33.29±8.16) and Spain (=33.60±8.06) is found to be higher than United Kingdom (=30.37±9.68); The mean score of India (=36.24±5.75) is found to be higher than United States (=33.61±7.20), Italy (=33.29±8.16), United Kingdom (=30.37±9.68), and Brazil (=30.88±9.66). When the results in terms of exercising are examined, it is seen that the mean score of Life Engagement (=23.05±4.36) of those who exercise, the mean score of those who do not exercise (=22.24±4.69), the mean score of those who exercise in Subjective Vitality (=35.15±7.36), compared to those who do not exercise (=30.96 ±9.10) is found to be significantly higher.

DISCUSSION

The Covid-19 pandemic has significantly impacted social norms and habits; some cultures have limited personal contact and intimacy, while others have established strong social distancing and hygiene habits. Cultural celebrations and events have been limited or moved to digital platforms, reshaping religious practices. Health culture and response varied, with some adopting stricter rules to protect public health, while others prioritized individual freedom and self-control. Communication and information sharing also varied culturally, affecting access to information. This study aims to examine the effect of exercise on life engagement and subjective well-being in different countries during the Covid-19 period.

As a result of the research; It has been determined that Turkey's mean score in Life Engagement scores is significantly higher than the United States, Italy, United Kingdom, Spain, Brazil, India and Canada. In Subjective Vitality, it has been determined that Turkey's mean score is higher than the United States, Italy, the United Kingdom, Spain, and Brazil; The mean score of the United States is higher than that of the United Kingdom and Brazil; The mean score of Italy and Spain is higher than that of the United Kingdom; The mean score of India is significantly higher than the United States, Italy, the United Kingdom and Brazil. It is listed as dates of the first Covid-19 case in the countries where the research is conducted; January 23 in the United States; January 27 in India and Canada; January 31 in Spain and the United Kingdom; February 21 in Italy; February 26 in Brazil and March 11, 2020 in Turkey. After the first cases are seen in the mentioned countries, governments took various measures. Within the scope of these measures taken in these countries, both partial and full closures have been realized (Andrews et al., 2020; Kumar, Malviya & Sharma, 2020; Redondo-Bravo et al., 2020; Jit, Jombart, Nightingale, Endo, Abbott & Edmunds, 2020; Indolfi & Spaccarotella, 2020; Serdan, Masi, Gorjao, Pithon-Curi, Curi & Hirabara, 2020; Türkiye Cumhuriyeti Sağlık Bakanlığı, 2022). While the closures caused an increase in the time individuals spent at home, they also caused a decrease in the daily physical activity level. In addition, the uncertainty of when the pandemic process will end and the increase in the number of cases day by day have brought along some psychological disorders in individuals. In this context, it is observed that Turkey is the last country to enter the pandemic process mentioned above after the first Covid-19 case. The main reason why Turkey is higher than other countries in both life engagement and subjective vitality; After the detection of Covid-19 by the Republic of Turkey, the establishment of a scientific committee consisting of experts in the field within the Ministry of Health; It is thought that the scientific committee should immediately implement the recommendations made. In addition, after the confirmation of the first case, the decisions taken in the 22-day period (schools switching to distance education, flexible working hours in the public, postponing both individual and team sports organizations with a high group audience rate, etc.) and the policies implemented are an important state reflex that has a significant impact on the process. In particular, the cabinet meetings with the Covid-19 agenda held before the Presidency had a positive effect on the management of the process in terms of participatory opinion sharing (Erdem, 2020). The health infrastructure of our country and taking the aforementioned measures with timely and rapid decisions prevented the rapid spread of the possible negative effects of the pandemic and allowed the possible negative effects on individuals to emerge later. As a matter of fact, in support of this view, Aşkın, Bozkurt and Zeybek (2020) stated in their research that our country protected our people from the possible bad consequences of the Covid-19 outbreak thanks to its advanced health infrastructure and rapid measures taken, that unlike many other countries, despite the time pressure and health risks, our health army acted in a combative, self-sacrificing and solution-oriented manner, and that our health workers, who are rich in knowledge and equipment, carried out an effective fight against the epidemic.

When the results are examined in terms of exercising, it is determined that the mean score of both life engagement and subjective vitality of those who exercise is significantly higher than those who do not exercise. This situation has once again emphasized the importance of exercise on human psychology. Exercise sharply reduces feelings of tension, anxiety and anger and increases life energy (Gauvin and Spence, 1996; Gauvin, 1990, Steptoe, Edwards, Moses, & Mathews, 1989, Yeung, 1996) and resilience (Van Dongen et al., 2020); it provides a high quality of life (Huang and Humphreys, 2012); It has been reported in the research results that more active individuals are happier (Salguero, Martínez-García, Molinero & Márquez, 2011). In addition, exercise supports health and improves the immune system. In many studies, emphasis is placed on regular exercise as an auxiliary element in the prevention of COVID-19 and the improvement of body health (Bo, Xi & Tian, 2021). Among the centers controlling human behavior are serotonergic neural pathways. Serotorin undertakes many tasks in the body, from controlling movement to regulating the perception of pain. With the increase in the amount of serotonin thanks to regular exercise, the physical and mental strength of individuals improves (Klempin, Beis, Mosienko, Kempermann, Bader & Alenina, 2013). These situations can lead to an increase in life engagement and subjective vitality in people. In fact, research has shown that exercising will keep the individual more fit (Kul, Demir & Katmer, 2020).

In terms of country*exercise groups, it is determined that exercising positively affects life engagement in Turkey, Italy, United Kingdom, Spain, Brazil and India; In the United States and Canada, this positive effect is not detected. When examined in terms of subjective vitality, while a positive effect of exercise on the subjective vitality effect is found in Turkey, the United States of America, Italy, the United Kingdom, Spain, Brazil and India; In Canada, this positive effect could not be detected. When the literature is examined, it is observed that Canada and the USA are at a higher level than other countries in terms of weekly regular exercise (IPSOS, 2021). Due to the fact that countries with low pre-pandemic physical activity levels increase the opportunity to spend more time on exercise during the pandemic, exercise has a more positive effect on life engagement. It is thought that there is no positive or negative effect on engagement. In summary, the lack of change in Canada and the US can be attributed to the fact that people continue to live naturally.

Conclusion and Recommendations

As a result, it pointed out that during the covid-19 pandemic process, participation in exercise has a positive effect on life engagement and subjective vitality, and in addition, life engagement and subjective vitality scores differ according to countries. The research is carried out during the intense period of the covid-19 pandemic. In order to make more efficient comparisons, conducting similar studies after covid-19 may provide more up-to-date results for comparisons. Moreover, it is recommended to conduct studies that will examine subjects that may affect life engagement and subject vitality (personality, motivation, resilience). In addition, exercise has positive effects on life engagement and subjective fitness in individuals. Based on this framework, the increase in online exercise applications in cases where it is not possible to exercise face-to-face may support individuals to make exercise a standard of living. These ideas demonstrate the importance of positive use of both media and social media.

Financial Support: No financial support was received from institutions and/or institutions during the preparation and writing of this study.

Conflict of Interest: There is no conflict of interest between the authors regarding the publication of this article.

Author Note: This research was presented as an oral presentation at the 18th International Congress of Sport Sciences.

References

Adler, A. (2014). *Yaşamın anlamı.* (Çev. Can, H.). Ankara: Tutku Yayınevi.

Andrews, M. A., Areekal, B., Rajesh, K. R., Krishnan, J., Suryakala, R., Krishnan, B., ... & Santhosh, P. V. (2020). First confirmed case of COVID-19 infection in India: A case report. *The Indian Journal of Medical Research*, *151*(5), 490.

Ansari, M., & Yousefabad, S. A. (2020). Potential threats of COVID-19 on quarantined families. *Public Health*, 183, 1. https://doi.org/10.1016/j.puhe.2020.04.014

Aşkın, R., Bozkurt, Y., & Zeybek, Z. (2020). Covid-19 pandemisi: Psikolojik etkileri ve terapötik müdahaleler. İstanbul Ticaret Üniversitesi Sosyal Bilimler Dergisi, 19(37), 304-318.

Bezner, J. R., Franklin, K. A., Lloyd, L. K., & Crixell, S. H. (2020). Effect of group health behaviour change coaching on psychosocial constructs associated with physical activity among university employees. International Journal of Sport and Exercise Psychology, 18(1), 93-107. https://doi.org/10.1080/1612197X.2018.1462232

Bo, W., Xi, Y., & Tian, Z. (2021). The role of exercise in rehabilitation of discharged COVID-19 patients. *Sports Medicine and Health Science*, *3*(4), 194-201. https://doi.org/10.1016/j.smhs.2021.09.001

Bostic, T. J., Rubio, D. M., & Hood. M. A. (2000). Validation of the subjective vitality scale using structural equation modelling. *Social Indicators Research*, 52(3), 313-319.

Cerea, S., Pecunioso, A., Casali, N., Moro, T., Paoli, A., & Ghisi, M. (2022). How COVID-19 lockdown affected physical activity levels and wellbeing: An Italian Survey. *International Journal of Sport and Exercise Psychology*, 1-16. https://doi.org/10.1080/1612197X.2022.2098358

Chen, W. J. (2016). Frequent exercise: A healthy habit or a behavioral addiction?. *Chronic Diseases and Translational Medicine*, *2*(04), 235-240. https://doi.org/10.1016/j.cdtm.2016.11.014

De Klerk, J. J., Boshoff, A. B., & Wyk, R. V. (2009). Measuring meaning in life in South Africa: validation of an instrument developed in the USA. *South African Journal of Psychology,* 39(3), 314-325.

Deci, E. L., & Ryan, R. M. (1991). *A motivational approach to self: Integration in personality.* In R. Dienstbier (Ed.), Nebraska symposium on motivation: Vol. 38. Perspectives on motivation (pp. 237–288). Lincoln: University of Nebraska Press

Deci, E.L. & Ryan, R.M. (2000). The what and why of goal pursuits: human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Demirel, H., Kayıhan, H., Özmert, E.N., & Doğan, A. (2014). *Türkiye fiziksel aktivite rehberi.* (2. Baskı). Ankara: Kuban Matbaacılık Yayıncılık.

Diener, E., & Seligman, M. (2002). Very happy people. *American Psychological Society,* 13(1), 81-84.

Dilmaç, B., & Sakarya, E. (2020). Evli bireylerin evlilik uyum, yaşam memnuniyeti ve yaşam bağlılıkları arasındaki yordayıcı ilişkilerin incelenmesi. *Necmettin Erbakan Üniversitesi Ereğli Eğitim Fakültesi Dergisi*, *2*(1), 1-11.

Duan, L., & Zhu, G. (2020). Psychological interventions for people affected by the COVID-19 epidemic. *The Lancet Psychiatry*, 7(4), 300-302. https://doi.org/10.1016/S2215-0366(20)30073-0

Erdem, İ. (2020). Koronavirüse (Covid-19) karşı Türkiye'nin karantina ve tedbir politikaları. *Electronic Turkish Studies*, *15*(4). https://doi.org/10.7827/TurkishStudies.43703

Ersoy, G. (2004). *Egzersiz ve spor yapanlar için beslenme*. Ankara: Nobel Basımevi.

Eryılmaz, A. (2012). Pozitif psikoterapi bağlamında yaşam amaçları belirleme ölçeğinin üniversite öğrencileri üzerinde psikometrik özelliklerinin incelenmesi. *Klinik Psikiyatri*, 15, 166-174.

European Centre for Disease Prevention and Control (ECDC): https://www.ecdc.europa.eu/en E.T. 01.05.2024

Fernandes, N. (2020). *Economic effects of coronavirus outbreak (COVID-19) on the World Economy*. SSRN Journal

Gauvin, L. (1990). An experiential perspective on the motivational features of exercise and lifestyle. *Canadian Journal of Sport Sciences, 15*(1), 51–58.

Gauvin, L., & Spence, J. C. (1996). Physical activity and psychological well-being: knowledge base, current issues, and caveats. *Nutrition Reviews*, *54*(4), S53.

George, D., & Mallery, P. (2019). *IBM SPSS statistics 26 step by step: A simple guide and reference.* (Sixteenth edition). Routledge, New York, NY 10017.

Giallonardo, V., Sampogna, G., Del Vecchio, V., Luciano, M., Albert, U., Carmassi, C., ... & Fiorillo, A. (2020). The impact of quarantine and physical distancing following COVID-19 on mental health: Study protocol of a multicentric Italian population trial. *Frontiers in Psychiatry*, 11, 533. https://doi.org/10.3389/fpsyt.2020.00533

Huang, H., & Humphreys, B. R. (2012). Sports participation and happiness: Evidence from US microdata. *Journal of economic Psychology*, *33*(4), 776-793. https://doi.org/10.1016/j.joep.2012.02.007

Indolfi, C., & Spaccarotella, C. (2020). The outbreak of COVID-19 in Italy: fighting the pandemic. *Case Reports*, *2*(9), 1414-1418. https://doi.org/10.1016/j.jaccas.2020.03.012

IPSOS, (2021). *Global vıews on exercıse and team sports*, Ipsos Global Advisor. E.T. 25.06.2021

İlhan, T., & Özbay, Y. (2010). Yaşam amaçlarının ve psikolojik ihtiyaç doyumunun öznel iyi oluş üzerindeki yordayıcı rolü. *Türk Psikolojik Danışma ve Rehberlik Dergisi,* 4(34), 109-118.

Jeong, H. G., Kim, D. Y., Kang, D. W., Kim, B. J., Kim, C. K., Kim, Y., ... & Lee, S. H. (2017). Physical activity frequency and the risk of stroke: a nationwide cohort study in Korea. *Journal of the American Heart Association*, *6*(9), e005671. https://doi.org/10.1161/JAHA.117.005671

Jit, M., Jombart, T., Nightingale, E. S., Endo, A., Abbott, S., & Edmunds, W. J. (2020). Estimating number of cases and spread of coronavirus disease (COVID-19) using critical care admissions, United Kingdom, February to March 2020. *Eurosurveillance*, *25*(18). https://doi.org/10.2807/1560-7917.ES.2020.25.18.2000632

Karagöz, Y. (2017). *Spss ve Amos uygulamalı nitel-nicel-karma bilimsel araştırma yöntemleri ve yayın etiği* (1. Baskı). İstanbul: Nobel Kitabevi.

Karasar, N. (2018). *Bilimsel araştırma yöntemleri: Kavramlar, ilkeler ve teknikler.* (32.Baskı). Ankara: Nobel Yayın Dağıtım.

Klempin, F., Beis, D., Mosienko, V., Kempermann, G., Bader, M., & Alenina, N. (2013). Serotonin is required for exercise-induced adult hippocampal neurogenesis. *Journal of Neuroscience*, *33*(19), 8270-8275. https://doi.org/10.1523/JNEUROSCI.5855-12.2013

Kubzansky, L. D., & Thurston, R. C. (2007). Emotional vitality and incident coronary heart disease: benefits of healthy psychological functioning. *Archives of General Psychiatry*, 64(12), 1393-1401. https://doi.org/10.1001/archpsyc.64.12.1393

Kul, A., Demir, R., & Katmer, A. N. (2020). Covid-19 salgını döneminde psikolojik sağlamlığın yordayıcısı olarak yaşam anlamı ve kaygı. *Electronic Turkish Studies*, 15(6). https://doi.org/10.7827/TurkishStudies.44419

Kumar, D., Malviya, R., & Sharma, P. K. (2020). Corona virus: A review of COVID-19. *EJMO*, *4*(1), 8-25. https://doi.org/10.14744/ejmo.2020.51418

Liu, C. H., Zhang, E., Wong, G. T. F., & Hyun, S. (2020). Factors associated with depression, anxiety, and PTSD symptomatology during the COVID-19 pandemic: Clinical implications for US young adult mental health. *Psychiatry Research*, 290, 113172. https://doi.org/10.1016/j.psychres.2020.113172

Lyubomirsky, S. (2007). *The How of Happiness: A scientific approach to getting the life you want.* The Penguin Press, NY.

Lyubomirsky, S., King, L. & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin*, 131, 803-855. https://doi.org/10.1037/0033-2909.131.6.803

McKnight P. E., & Kashdan, T., B. (2009). Purpose in life as a system that sustains health and well-being: An integrative, testable theory. *Review of General Psychology*, 13, 242-251. https://doi.org/10.1037/a0017152

Nix, G., Ryan, R.M., Manly, J.B., & Deci, E.L. (1999). Revitalization through selfregulation: the effects of autonomous versus controlled motivation on happiness and vitality. *Journal of Experimental Social Psychology*, 35, 266- 284.

Pérez-Fuentes, M., Jurado, M. D., Martínez, Á. M., & Linares, J. J. (2020). Threat of COVID-19 and emotional state during quarantine: Positive and negative affect as mediators in a cross-sectional study of the Spanish population. *PLoS One*, 15(6), 1–11. https://doi.org/10.1371/journal.pone.0235305

Redondo-Bravo, L., Moros, M. J. S., Sánchez, E. V. M., Lorusso, N., Ubago, A. C., García, V. G., ... & Larrauri, A. (2020). The first wave of the COVID-19 pandemic in Spain: characterisation of cases and risk factors for severe outcomes, as at 27 April 2020. *Eurosurveillance*, *25*(50).

Rodrigues, F., Faustino, T., Santos, A., Teixeira, E., Cid, L., & Monteiro, D. (2022). How does exercising make you feel? The associations between positive and negative affect, life satisfaction, self-esteem, and vitality. *International Journal of Sport and Exercise Psychology*, 20(3), 813-827. https://doi.org/10.1080/1612197X.2021.1907766

Roy, D., Tripathy, S., Kar, S. K., Sharma, N., Verma, S. K., & Kaushal, V. (2020). Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic. *Asian Journal Of Psychiatry*, 51, https://doi.org/10.1016/j.ajp.2020.102083

Ryan, R. M., & Frederick, C. (1997). On energy, personality, and health: Subjective vitality as a dynamic reflection of well-being. *Journal of Personality*, *65*(3), 529-565.

Salama-Younes, M. (2011). Positive mental health, subjective vitality, and satisfaction with life for French physical education students. *World Journal of Sport Sciences*, 4(2), 90-97.

Salguero, A., Martínez-García, R., Molinero, O., & Márquez, S. (2011). Physical activity, quality of life and symptoms of depression in community-dwelling and institutionalized older adults. *Archives of gerontology and geriatrics*, *53*(2), 152-157. https://doi.org/10.1016/j.archger.2010.10.005

Satici, B., Saricali, M., Satici, S. A., & Griffiths, M. D. (2020). Intolerance of uncertainty and mental wellbeing: serial mediation by rumination and fear of COVID-19. *International Journal of Mental Health and Addiction*, 1-12. https://doi.org/10.1007/s11469-020-00305-0

Scheier, M. F., Wrosch, C., Baum, A., Cohen, S., Martire, L. M., Matthews, K. A,. Schulz, R., & Zdaniuk, B. (2006). The life engagement test: Assessing purpose in life. *Journal of Behavioral Medicine*, 29(3), 291-298. https://doi.org/10.1007/s10865-005-9044-1

Serdan, T. D., Masi, L. N., Gorjao, R., Pithon-Curi, T. C., Curi, R., & Hirabara, S. M. (2020). COVID-19 in Brazil: Historical cases, disease milestones, and estimated outbreak peak. *Travel Medicine and İnfectious Disease*, *38*, https://doi.org/10.1016/j.tmaid.2020.101733

Sivri, F. Z. (2019). *Yetişkinlerde affedicilik, iyimserlik ve öznel zindelik arasındaki ilişkinin incelenmesi.* (Yüksek Lisans Tezi). Necmettin Erbakan Üniversitesi, Eğitim Bilimleri Enstitüsü, Konya.

Steptoe, A., Edwards, S., Moses, J., & Mathews, A. (1989). The effects of exercise training on mood and perceived coping ability in anxious adults from the general population. *Journal of Psychosomatic Research*, *33*(5), 537-547. https://doi.org/10.1016/0022-3999(89)90061-5

Stewart A. L., Hays R. D., & Ware J. E. (1992). *Health perceptions, energy, fatigue, and health distress measures*. In A. L. Stewart, J. E. Ware & N. C. Durham (Eds.), Measuring functioning and well-being: The medical outcomes study approach (pp. 143–172). London: Duke University Press.

Tazegül, Ü. (2017). Sporcuların kişilik özellikleri ile yaşama bağlılıkları arasındaki ilişkinin belirlenmesi. *Akademik Sosyal Araştırmalar Dergisi,* 5(9), s. 587-594.

Tazegül, Ü. (2018). Elit düzeydeki tenisçilerin olumlu düşünme ve yaşama bağlılık düzeyleri arasındaki ilişkinin belirlenmesi. *Akademik Bakış Uluslararası Hakemli Sosyal Bilimler Dergisi*, (67), 16-25.

Türkiye Cumhuriyeti Sağlık Bakanlığı (2022). https://www.saglik.gov.tr/TR,80604/bakan-koca-turkiyenin-kovid-19la-1-yillik-mucadele-surecini-degerlendirdi.html E.T. 22.01.2022

Uğur, E. & Akın, A. (2015). Yaşam bağlılığı ölçeği Türkçe formu: Geçerlik ve güvenirlik çalışması. *İnsan ve Toplum Bilimleri Araştırmaları Dergisi,* 4(2), 424-432.

URL-1: https://ourworldindata.org/ E.T. 01.04.2024

Van Dongen, E. J., Haveman-Nies, A., Doets, E. L., Dorhout, B. G., & de Groot, L. C. (2020). Effectiveness of a diet and resistance exercise intervention on muscle health in older adults: ProMuscle in Practice. *Journal of the American Medical Directors Association*, *21*(8), 1065-1072. https://doi.org/10.1016/j.jamda.2019.11.026

Woolcott, O.O., & Bergman, R.N. (2018). Relative fat mass (RFM) as a new estimator of whole-body fat percentage─ A cross-sectional study in American adult individuals. *Scientific Reports*, 8(1), 1-11. https://doi.org/10.1038/s41598-018-29362-1

Yarizadeh, H., Asadi, S., Baharlooi, H., Setayesh, L., Kakavandi, N.R., Hambly, C., & Mirzaei, K. (2020). Beneficial impact of exercise on bone mass in individuals under calorie restriction: a systematic review and Meta-analysis of randomized clinical trials. *Critical Reviews in Food Science and Nutrition*, 1-13. https://doi.org/10.1080/10408398.2020.1739620

Yeung, R. R. (1996). The acute effects of exercise on mood state. *Journal of Psychosomatic Research*, *40*(2), 123-141.

Yüksel, R. (2013). *Genç yetişkinlerde aşk tutumları ve yaşamın anlamı.* (Yüksek Lisans Tezi). Sakarya Üniversitesi, Eğitim Bilimleri Enstitüsü, Sakarya.

Zorba, E. (2014). *Herkes için yaşam boyu spor.* (4. Basım). Ankara: Canset Form Matbaacılık.

Except where otherwise noted, this paper is licensed under a **Creative Commons Attribution 4.0 International license.**