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PAGES: 67-79

ORIGINAL PDF URL: <https://dergipark.org.tr/tr/download/article-file/3149031>

## Wellness Perceptions of Female and Male Athletes Playing in Different Volleyball Leagues

### Farklı Liglerde Oynayan Kadın ve Erkek Voleybolcuların İyi Hali Düzeylerinin Karşılaştırılması

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#### Abstract

The purpose of this study was to compare the wellness self-perception of female and male volleyball players playing in different leagues according to league and gender. 78 women and 48 men aged 18-60 playing in different leagues of the Volleyball Federation of Turkey (Misli.com Sultans League (Super League – female), AXA Sigorta Efeler League (Super League – male), First League (female and male)) and independent of federation the Veteran's League participated in the study voluntarily. An online survey was conducted with the volleyball players assessing their wellness self-perception and demographic characteristics. IBM SPSS Statistics 24.0 was used for data analysis. A t-test was used for independent groups and an ANOVA analysis for multiple comparisons. The level of statistical significance was set at  $p < 0.05$ . The results indicated that the perception of wellness for the volleyball players participating in the study was at a “high level”. It was determined that the scores of the participants' wellness self-perception and sub-dimensions did not differ significantly by gender ( $p > 0.05$ ). In addition, emotional wellness scores differ significantly according to the league they play ( $p < 0.05$ ); however, it was determined that gender and league had no common effect on sub-dimensions and wellness self-perception total scores ( $p > 0.05$ ).

**Keywords:** Volleyball Players, Wellness Perceptions, Leagues

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## Öz

Bu çalışmanın amacı, farklı liglerde oynayan kadın ve erkek voleybolcuların lig ve cinsiyete göre iyi yaşam benlik algılarını karşılaştırmaktır. Araştırmaya Türkiye Voleybol Federasyonu'nun farklı liglerinde (Misli.com Sultanlar Ligi (Süper Lig – kadın), AXA Sigorta Efeler Ligi (Süper Lig – erkek)), Birinci Lig (kadın ve erkek) ve federasyondan bağımsız olan Veteranlar Liginde oynayan 18-60 yaş arası 78 kadın ve 48 erkek gönüllü olarak katıldı. Voleybolcuların kendi sağlık algılarını ve demografik özelliklerini değerlendiren çevrimiçi bir anket yapıldı. Veri analizi için IBM SPSS Statistics 24.0 kullanıldı. Bağımsız gruplar için t-test ve çoklu karşılaştırmalar için ANOVA analizi kullanıldı. Anlamlılık düzeyi  $p < 0.05$  olarak kabul edildi. Sonuç olarak, araştırmaya katılan voleybolcuların iyilik algısının “yüksek düzeyde” olduğu bulundu. Katılımcıların iyilik hali benlik algısı ve alt boyut puanlarının cinsiyete göre anlamlı bir şekilde farklılaşmadığı belirlendi ( $p > 0.05$ ). Voleybolcuların duygusal iyilik hali puanlarının oynadıkları lige göre istatistiksel olarak anlamlı farklılık tespit edildi ( $p < 0.05$ ). Fakat cinsiyet ve ligin alt boyutlar ve iyilik hali toplam puanları üzerinde ortak etkisinin olmadığı belirlendi ( $p > 0.05$ ).

**Anahtar Kelimeler:** Voleybol Oyuncuları, İyilik Hali, Ligler

## INTRODUCTION

Wellness is a multidimensional concept that aims to keep the peace and health of the individual at the highest level and includes physical, emotional, mental, spiritual, and social well-being. Sports and regular exercises, which are a significant part of a wellness lifestyle, reduce the risk of chronic diseases, improve cardiovascular health, increase strength and endurance, and promote healthy habits such as proper nutrition and adequate sleep, which are critical components of physical wellness (Oishi and Diener, 2001; Brown, Hainline, Kroshus and Wilfert, 2014; Edwards, 2002; Baceviciene, 2019).

It has been stated that participation in sports improves cognitive function, memory, and attention span, reduces cognitive decline, symptoms of stress, anxiety, and depression, and the risk of dementia, as well as it improves well-being and happiness, and ensures a sense of achievement, self-confidence, and social connections, which are important factors in emotional wellness. (Bodziony and Stetson, 2022; Kumar and Nigam, 2020; Kioumourtzoglou, Michalopoulou, Tzetzis and Kourtessis, 2000). While sport contributes to the improvement of emotional wellness by providing a sense of purpose, discipline and perseverance, connection with others, and opportunities for personal growth and development; On the other hand, if winning becomes the sole goal and becomes a source of pressure and stress, it can have negative effects on emotional wellness (Crocker, Tamminen and Bennett, 2017; Jones, Ratten and Hayduk, 2020).

Spiritual wellness is an individualized concept that represents spiritual life based on beliefs. The relationship between sport and spiritual wellness is complex. Social culture and beliefs differ according to the structure of the individual and the sport he/she does (Roychowdhury, 2019). It has been reported that the athletes involved in team sports are strengthened spiritually by establishing a deep sense of bond with their teams, and the sense of habit and beliefs created by sports contribute positively to the mental health of the athletes (Bopp et al., 2021; Turelli, Tejero-González, Vaz and Kirk, 2020). Some team athletes have some beliefs such as wearing the same jersey they won matches, kissing or hitting the ball to the floor several times before serving, etc. to calm the excitement to win the match before and during the match. Since these are believed to bring luck it makes the athlete feel

better (Womack, 1992). It has been stated in studies that team sports develop social skills encourage teamwork, and the emotional and game intelligence and ability to fight the stress of the players are higher than the athletes in individual sports (Mohammad, Khan and Singh, 2015; Akelaitis and Malinauskas, 2018; Miller and Dolendo, 2022; Bedard, Hanna and Cairney, 2020).

Volleyball, which is an Olympic branch, has been described as a team sport in which aerobic and anaerobic processes are intense, with physical and psychological stressors experienced when played with extended sets (Horta, Bara Filho, Coimbra, Miranda and Werneck, 2019). For a team to be successful, the athletes must have a solid psychological structure, team spirit, and an excellent technical and tactical protocol. Physical characteristics of volleyball players, their explosive power, strength, speed and jump performance, agility, coordination, and flexibility are expected to be good (Tanner and Gore, 2012). Since the volleyball match is played for at least 45 minutes and a maximum of two hours, the players jump hundreds of times and make instant decisions to run to the ball, spike, and go to the block during the game (Gonçalves, Lopes, Nunes, Marinho and Neiva, 2019). For these reasons, mental characteristics such as being able to read the game, ball sense, high concentration, sense of vision and movement, and perception need to be developed. Apart from these qualities, players should be able to cope with stress, reverse negativity, be self-confident, be determined for training, be willing to play well, and have game intelligence (Kabasakal and Şahan, 2009).

The psychological and social effects of volleyball are intertwined concepts. The presence of the net in the game is an essential factor in preventing physical contact with the opponent, thus reducing violence success is tried to be achieved by the game revealing will and psychological power, and the athlete's sense of sharing develops since it is a team game (Reese, 2005). It has been reported that there is a positive relationship between wellness level and performance and that athletes with high physical and mental wellness levels perform better in studies examining the relationship between physical, mental, social, and emotional wellness levels and the performance of volleyball players (Knight, 2020). It has been stated that the goodness of all dimensions of wellness is an important factor that can affect the success of volleyball players (Rebelo et al., 2023; Altavilla, Forte and D'Isanto, 2019). It has been observed that veteran athletes who have accepted sports as a lifestyle and profession are physically, mentally, and socially better than their sedentary peers despite their advanced age (Zaccagni, Onisto and Gualdi-Russo, 2009).

When the literature is searched, it has been observed that studies on the physical and physiological characteristics, biomechanics, motor performance characteristics (jump, explosive power, endurance, strength), and injuries of elite female and male volleyball players playing in different categories have been intensely conducted (Gonçalves et al., 2019; Carvalho, Roriz and Duarte, 2020; Claver, Jiménez, García-González, Fernández-Echeverría and Moreno, 2016). However, there are limited studies examining how wellness perception changes among different sports and athlete populations (Abbas, Bhatti, Chaudhary, Nazeer and Khan, 2021; Silva, Monteiro and Sobreiro, 2020; Cunningham, Broglio, O'Grady and Wilson, 2020; Lassandro et al., 2021; Kashif, Ali and Azam, 2022; de Subijana, Ramos, Harrison and Lupo, 2022).

Although there are studies on psychological approach and wellness perception in different sports branches, there are no comparative studies examining the effect of the athlete on the perception of wellness in volleyball. Therefore, in the current study, it has been examined whether the wellness self-perception levels of the athletes who have played volleyball professionally for many years and quit sports and those who continue their active sports life have changed and whether there are differences between their wellness perception levels.

## **MATERIALS AND METHODS**

### **Participants**

Using the SurveyMonkey sample calculation table, data from 126 people were calculated at 8% error at a 98% confidence level (SurveyMonkey, 2023). A total of 126 volleyball players, 78 female, and 48 male, playing at different levels of the Volleyball Federation of Turkey (Misli.com Sultans League (Super League – female), AXA Sigorta Efeler League (Super League – male)), First League (female and male) and independent of federation the Veteran's League participated in the study voluntarily. 32.5% of the volleyball players were in the super league; 43.7% were in the first league and 23.8% of them were competing in the veteran league. The mean age for female super, first, and veteran league volleyball players were  $28.11 \pm 3.48$  years,  $20.94 \pm 1.90$  years,  $48.00 \pm 7.33$  years, and the mean duration of professional sports career were  $12.30 \pm 4.75$  years,  $5.59 \pm 2.41$  years,  $19.00 \pm 5.91$  years, respectively. For males, the mean age for super, first, and veteran league players were  $28.21 \pm 4.44$  years,  $19.14 \pm 1.80$  years,  $47.08 \pm 9.37$  years; and the mean duration of professional sports career were  $10.86 \pm 6.29$  years,  $5.10 \pm 2.84$  years and  $21.46 \pm 8.17$  respectively. Only players that have a professional career of over 5 years, and who had not suffered any lower / upper extremity injury in the last year were included in the study. All participants were volunteers. Players who did not complete the personal information form and scale were excluded from the study. The research was approved by the Halic University Non-Interventional Scientific Research Ethics Committee for human research in accordance with the 2013 Declaration of Helsinki (18.05.2020-75).

### **Data Collection Tools**

An online survey was used to assess players' age, professional sports career, gender, and wellness self-perception. Wellness Self-Perception Scale; the validity and reliability study of the scale in the "Fundamental Concepts of Fitness and Wellness" by Corbin et al. (2006) was conducted by Odabas in 2017. The wellness self-perceptions scale has 15 items and 5 factors, and each factor consists of three questions. This is a 4-point Likert-type scale in which the response choices consisted of (1) I do not agree at all, (2) I do not agree, (3) I agree, and (4) I definitely agree. The wellness rating chart is shown below (Table 1.).

**Table 1.** Wellness self-perception scale

Wellness rating chart	Wellness dimension scores	Comprehensive wellness score
High-level wellness	10-12	50-60
Good wellness	8-9	40-49
Marginal wellness	6-7	30-39
Low-level wellness	Below 6	Below 30

The test-retest reliability coefficient of the wellness self-perception scale and Cronbach's alpha reliability coefficient values of the total scale of sub-dimensions were found to be over 0.70. It shows satisfactory reliability for emotional wellness (3 items), intellectual wellness (3 items), physical wellness (3 items), social wellness (3 items), and spiritual wellness (3 items). The t values for all items were significant at the 0.01 level. Also, the wellness self-perception scale showed good adjustment and was a reliable scale according to adjustment goodness statistics and reliability values (Buyukozturk, 2011; Guvendi, Demir and Dal, 2019; Odabas, 2017).

### Analysis of Data

SPSS 24.0 (Statistical Package for Social Sciences – SPSS Inc. IBM Corporation, Stanford, USA) program was used to statistically evaluate the data. In this study, the Cronbach Alpha coefficient of the scale was 0.81. To test the normality of the distribution of the data, the Skewness and Kurtosis Test was performed and it was determined that the distribution was between – 1.5 and 1.5. Parametric tests were applied because the data was in the normal distribution range (Tabachnick, Fidell and Ullman, 2013). Independent samples t-test was used to compare the scale total and sub-dimension scores by gender while one-way ANOVA was conducted to compare the scale total and sub-dimension scores (them) for the league's athletes played at. When a significant difference was observed, the LSD post hoc test was used to identify which groups the difference was between. A two-way ANOVA test was used to determine the effect of gender and wellness on the scale total and sub-dimension scores. The Confidence interval was accepted as  $p < 0.05$ .

## RESULTS

The mean score of the wellness self-perception scale has been calculated as  $50.87 \pm 4.76$  (Table 2).

**Table 2.** Descriptive statistics of scale and sub-dimension scores

Scale and Sub-dimension (n=126)	Min.	Max.	X	SD	Skewness	Kurtosis
Emotional Wellness	5.00	12.00	9.82	1.49	-0,347	-0,255
Intellectual Wellness	7.00	12.00	10.04	1.16	-0,237	-0,620
Physical wellness	6.00	12.00	9.92	1.45	-0,179	-0,588
Social Wellness	8.00	12.00	10.65	1.16	-0,311	-1,030

Spiritual Wellness	6.00	12.00	10.44	1.32	-0,471	-0,430
<b>Comprehensive Wellness</b> (Sum of five wellness scores)	40.00	60.00	50.87	4.76	-0,264	-0,787

The wellness perception of the volleyball players who participated in the study was found to be at a “high level”. When the dimensions are investigated, the highest levels of wellness were identified as social and spiritual wellnesses.

**Table 3.** Comparison of scale scores by gender

Scale and Sub-dimension	Sex	n	X	SD	t	p
<b>Emotional Wellness</b>	Female	78	9.76	1.43	-0.59	0.559
	Male	48	9.92	1.60		
<b>Intellectual Wellness</b>	Female	78	10.04	1.14	-0.02	0.988
	Male	48	10.04	1.18		
<b>Physical Wellness</b>	Female	78	10.05	1.40	1.29	0.199
	Male	48	9.71	1.52		
<b>Social Wellness</b>	Female	78	10.64	1.12	-0.12	0.905
	Male	48	10.67	1.24		
<b>Spiritual Wellness</b>	Female	78	10.50	1.27	0.68	0.495
	Male	48	10.33	1.42		
<b>Comprehensive Wellness</b> (Sum of five wellness scores)	Female	78	50.99	4.64	0.37	0.715
	Male	48	50.67	5.00		

In Table 3, it was illustrated that the scores of the wellness self-perception and sub-dimensions did not differ significantly according to the gender of the participants ( $p > 0.05$ ).

**Table 4.** Comparison of scale scores by the leagues

Scale and Sub-dimension	Leagues	n	X	SD	F	p	Significant Difference
<b>Emotional Wellness</b>	Super	41	10.22	1.65	3.12	<b>0.048*</b>	<b>A&gt;B</b>
	First	55	9.47	1.39			
	Veteran	30	9.90	1.32			
<b>Intellectual Wellness</b>	Super	41	10.15	1.22	1.72	0.183	
	First	55	10.15	1.06			
	Veteran	30	9.70	1.21			
<b>Physical Wellness</b>	Super	41	10.10	1.50	0.50	0.608	
	First	55	9.87	1.28			
	Veteran	30	9.77	1.70			
<b>Social Wellness</b>	Super	41	10.76	1.24	1.48	0.231	
	First	55	10.75	1.13			
	Veteran	30	10.33	1.09			
<b>Spiritual Wellness</b>	Super	41	10.59	1.22	0.44	0.643	
	First	55	10.33	1.36			
	Veteran	30	10.43	1.41			

<b>Comprehensive Wellness</b> (Sum of five wellness scores)	Super	41	51.80	4.91	1.27	0.285
	First	55	50.56	4.10		
	Veteran	30	50.13	5.59		

\*p&lt;0.05

The results that were presented in Table 4, indicate that emotional wellness scores differ significantly according to the league ( $F = 3.12$ ;  $p < 0.05$ ). The results of the LSD post hoc test showed the emotional wellness scores of the participants playing in the Super League are significantly higher than the scores of the participants playing in the 1st League. Scores of the intellectual, physical, social, and spiritual wellness sub-dimensions and the total scores of wellness self-perception did not differ significantly concerning the league the participants played at ( $p > 0.05$ ).

**Table 5.** The common effect of gender and league on sub-dimensions

Scale and Sub-dimension	Sex	Leagues	X ± SD	p
<b>Emotional Wellness</b>	Female	Super (n=27)	10.07±1.59	0.804
		First (n=34)	9.47±1.26	
		Veteran (n=17)	9.82±1.42	
	Male	Super (n=14)	10.50±1.79	
		First (n=21)	9.48±1.60	
		Veteran (n=13)	10.00±1.22	
<b>Intellectual Wellness</b>	Female	Super (n=27)	10.11±1.34	0.718
		First (n=34)	10.21±0.88	
		Veteran (n=17)	9.59±1.23	
	Male	Super (n=14)	10.21±0.97	
		First (n=21)	10.05±1.32	
		Veteran (n=13)	9.85±1.21	
<b>Physical Wellness</b>	Female	Super (n=27)	10.48±1.34	0.103
		First (n=34)	9.79±1.15	
		Veteran (n=17)	9.88±1.83	
	Male	Super (n=14)	9.36±1.55	
		First (n=21)	10.00±1.48	
		Veteran (n=13)	9.61±1.55	
<b>Social Wellness</b>	Female	Super (n=27)	10.74±1.26	0.963
		First (n=34)	10.70±1.03	
		Veteran (n=17)	10.35±1.06	
	Male	Super (n=14)	10.78±1.25	
		First (n=21)	10.81±1.29	
		Veteran (n=13)	10.31±1.18	

<b>Spiritual Wellness</b>	Female	Sper (n=27)	10.67±1.21	0.888
		First (n=34)	10.41±1.28	
		Veteran (n=17)	10.41±1.37	
	Male	Super (n=14)	10.43±1.28	
		First (n=21)	10.19±1.50	
		Veteran (n=13)	10.46±1.51	
<b>Comprehensive Wellness</b> (Sum of five wellness scores)	Female	Super (n=27)	52.07±5.01	0.909
		First (n=34)	50.59±3.41	
		Veteran (n=17)	50.06±5.98	
	Male	Super (n=14)	51.28±4.84	
		First (n=21)	50.52±5.12	
		Veteran (n=13)	50.23±5.28	

In Table 5, it can be observed that there are differences between the sub-dimension and Wellness self-perception scores of the female and male volleyball players concerning the league they play at. However, there is no common effect on the total scores of emotional ( $F = 0.22$ ), intellectual ( $F = 0.33$ ), physical ( $F = 2.31$ ), social ( $F = 0.04$ ), spiritual ( $F = 0.12$ ), and wellness self-perception ( $F = 0.10$ ) ( $p > 0.05$ ).

## DISCUSSION AND CONCLUSION

This study was conducted to compare five dimensions of well-being perceptions of veteran and active volleyball players. The sample group in the research consisted of men and women who had professional sports life in the past and continued their active sports life in leagues.

The results illustrate that the sub-dimensions and total well-being levels of all athletes playing in three different leagues were high, and there was no difference between the physical, mental, and psychological well-being of the athletes in three different age groups ( $p > 0.05$ ). Also, it was shown that the wellness dimensions were positively related to each other. These results indicate that participation in sports at all ages is positively influential on emotional wellness, intellectual wellness, physical wellness, social wellness, and spiritual wellness. Which could mean that participation might improve the general health status of volleyball players (Vasić et al., 2021). Zaccagni et al. (2009) reported that there is no difference in visual perception and cognitive functions between young and old elite athletes despite the age difference and they are better when compared to those who did not do sports. In addition, regular sports activity is a factor that can affect the biological aging process in elite athletes (Zaccagni et al., 2009).

Positive and negative experiences in professional sports life, which start in childhood and continues for a long time, can affect the physical, psychological, and mental health of athletes. Intense training and competition increase psychological stress in elite athletes and can put their mental health at risk (Peluso and Andrade, 2005; Markser, 2011; Schinke and Stambulova, 2017; Rebelo et al., 2023). In addition to these studies, according to Cunningham and colleagues, when the narratives of veteran

athletes exposed to head impacts are examined, cognitive difficulties increase in their normal lives (Cunningham et al., 2020).

Some studies report that long-distance runners and basketball athletes have high rates of psychological distress and discomfort (Markser, 2011; Armstrong and VanHeest, 2002). Guskiewicz et al. (2007) argue that athletes have mental health risks similar to non-athletes, but overtraining syndrome (Peluso and Andrade, 2005) might further increase mental health risks in athletes (Stambulova, Alfermann, Statler and Côté, 2009). Contrary to some of the existing literature, this study found that all aspects of fitness were high in volleyball players playing at different levels. The results of this study exhibit that social, spiritual, and intellectual dimension scores were very high, and the emotional and physical dimension scores were slightly lower than the other sub-dimensions.

In a study evaluating the role of sport in profiling mood and well-being among Pakistani elite athletes, the findings indicated that sport can contribute to the overall development of its participants (Abbas et al., 2021). In addition, it is recommended that elite athletes provide strong funding to achieve success in the international arena. Thus, the perceived value of athletes will increase and individuals will reach a higher level of subjective well-being (Silva et al., 2020). No difference was found when the total well-being and sub-dimension scores were compared concerning gender. It can be concluded that the health levels of male and female volleyball players in all three leagues are similar. The game of volleyball may positively affect the social, physical, mental, and spiritual well-being of the players. This result is parallel to what Guvendi and his/her colleagues (2019) found in their study which was conducted among university students, where it was reported that the physical and fitness parameters of young people participating in the exercise were high.

De Subijana et al. (2022) suggest that athletes should be encouraged to continue working while competing and to plan for the end of their sporting career. It should also be kept in mind that athletes' retirement may be out of their control. With athlete welfare in mind, they are advised not to neglect the risks involved in participating in sports that require more than four hours of training per day. It is predicted that this will prevent them from developing life skills in their post-sport retirement period (de Subijana et al., 2022). In the study examining the quality of life and physical activity of veteran athletes (age group of 28 to 60 years n=200), most of the participants voluntarily quit sports and stated that they were satisfied with their lives in retirement. Participants reported that they felt lucky to participate in professional sports and explained that the advantages of participating in sports were more important than any negative effects (Kashif et al., 2022).

The distribution of duties and responsibilities within the team, positive and negative experiences, and an environment that promotes success all lead to the personal development of athletes (MacDonald, Côté, Eys and Deakin, 2011). In addition, the motivation and psychological abilities of elite volleyball players are higher than non-elite players, and elites perform better due to higher concentration and self-confidence (Rivera and Dosil, 2007; Mohammadzadeh and Sami, 2014). In the study conducted with different groups of volleyball athletes, it was examined how people cope with physical and emotional workloads emotionally and physically and whether they are particularly

physically and mentally well. It was reported that the data showed that self-perception (self-physical) for physical performance was positive on average and self-perception for motivational performance was negative on average (Altavilla et al., 2019). Eagleton et al. (2007) report that team athletes are more extroverted than individual athletes and non-athletes (Eagleton, McKelvie and De Man, 2007). This is also consistent with the findings of this study.

When the total and sub-dimension scores of the wellness scale are compared concerning leagues, it can be argued that the emotional wellness scores of the athletes participating in the super league differ significantly when compared to the athletes from the other two leagues. Furthermore, it can also be concluded that the emotional wellness levels of the volleyball players playing in the super league are higher. In this study, no common effect was found with respect to gender or league on the well-being and self-perception of volleyball players and there was no change in the sub-dimensions of well-being. The results of this study show that engaging in volleyball at any age has a positive effect on the perception of emotional well-being.

**Conflicts of interest:** The authors declare that there is no conflict of interest with any financial or nonfinancial organization regarding the subject matter or materials discussed in the manuscript.

**Authors' contributions:** Design of the study: 1. Author % 30, 2. Author % 30, 3. Author % 25, 4. Author % 15 contributed. All authors have read and approved the final manuscript.

**Ethics Committee:** Halic University Non-Interventional Scientific Research Ethics Committee. Date: 18.05.2020. Protocol Number: 75

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