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Sanal Gerçeklik (Metaverse) Kullanıcıları ile Fiziksel Aktivite Katılımcılarının Algılanan Fiziksel Mental Sağlık Çıktıları

Elif AKÇA^{1*}, Esra EMİR¹

¹İstanbul Aydın Üniversitesi, Spor Bilimleri Fakültesi, İstanbul, Türkiye.

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Öz

Araştırmanın amacı dijital oyun katılımcıları ile fiziksel aktivite katılımcılarının algılanan fiziksel-mental sağlık çıktılarını incelenmek ve değişkenler arasındaki ilişkiyi test etmektir. Bu çalışmada sosyal bilimlerde kullanılan araştırma modellerinden ilişkisel tarama yöntemi kullanılmıştır. Çalışmanın araştırma grubunu fiziksel aktiviteye veya dijital oyunlara katılan 251 katılımcı oluşturmaktadır. Araştırmada kullanılan veri toplama araçları Rekreatasyonda Algılanan Sağlık Çıktıları Ölçeği ve Warwick-Edinburgh Mental İyi Oluş Ölçeği'dir. Veriler IBM SPSS 26 paket programıyla analiz edilmiştir. Araştırmadan elde edilen sonuçlara göre rekreatsyonel aktivite türü ve gelir durumu değişkenine göre rekreatsyonda algılanan sağlık çıktıları ve mental iyi oluş seviyelerinin anlamlı olarak farklılaştığı sonucuna ulaşılmıştır. Cinsiyet değişkeni ile rekreatsyonda algılanan sağlık çıktıları ve mental iyi oluş düzeylerinin ise istatistiksel olarak anlamlı farklılık yaratmadığı sonucuna ulaşılmıştır. Bunun yanı sıra rekreatsyonda algılanan sağlık çıktıları ve mental iyi oluş düzeyleri arasında pozitif yönde ve yüksek düzeyde bir ilişki olduğu tespit edilmiştir. Bu bağlamda bireylerin fiziksel olarak aktif olabilecekleri rekreatsyonel aktivitelere yönlendirilmeleri ve bu konuda bilgilendirilmeleri, aktif bir yaşam tarzının benimsenmesinin önemi konusunda bilgilendirilmeleri sağlanabilir. Aynı zamanda olumlu serbest zaman deneyimleri yaşayabilecekleri amaçlı ve planlı aktiviteler düzenlenebilir.

Anahtar Kelimeler: Dijital oyun, Fiziksel aktivite, Fiziksel-mental sağlık

Perceived Physical Mental Health Outcomes of Virtual Reality (Metaverse) Users and Physical Activity Participants

Abstract

The aim of the research is to examine the perceived physical-mental health outcomes of digital game participants and physical activity participants and to test the relationship between the variables. In this research, the relational survey model, one of the research models used in social sciences, was designed. The research group of the study consists of 251 participants who participate in physical activity or digital games. The data collection tools used in the study are the Perceived Health Outcomes in Recreation Scale and the Warwick-Edinburgh Mental Well-Being Scale. The data obtained in the study were analyzed with the IBM SPSS 26 package program. According to the results obtained from the research, it has been concluded that the perceived health outcomes and mental well-being levels differ significantly in recreation according to the type of recreational activity and income status variable. It was concluded that the perceived health outcomes and mental well-being levels in recreation with the gender variable did not make a statistically significant difference. In this context, individuals can be directed to recreational activities in which they can be physically active and informed about this issue, and they can be informed about the importance of adopting an active lifestyle. Purposeful and planned activities can be organized where they can have positive free time experiences.

Keywords: Digital game, Physical activity, Physical-mental health

* Sorumlu Yazar: Elif AKÇA, E-posta: e.akca1234@gmail.com

GİRİŞ

Sağlık algısı, kişilerin sağlığına ilişkin bireysel düşüncelerini, duygularını, beklentilerini ve önyargılarını ifade etmektedir (Çapık, 2006). Algılanan sağlık ise sağlığı birçok boyutta ele almakta ve kişinin biyolojik, sosyal ve bilişsel durumlarını değerlendirmelerine olanak sağlamaktadır (Tuğut ve Bekar, 2008). Karademas ve diğerlerine göre kişilerin olumlu sağlık algısına sahip olmaları fiziksel aktivite aracılığıyla mümkün olmaktadır (Karademas vd., 2011). Sağlıklı yaşam tarzını sürdürmenin önemli bir parçası olarak görülen fiziksel aktivite, başta kardiyovasküler hastalıklar olmak üzere, metabolik sendrom, obezite, meme ve kolon kanseri gibi kanserler, düşmeye bağlı kırıklar, demans, depresyon gibi akıl hastalıkları riskini azaltır (Jansson vd., 2015). Ek olarak fiziksel aktivitelere düzenli katılım sağlayan bireylerin yağ kütlesinin azaldığı ve yağsız kütlenin artarak vücut kompozisyonunu olumlu yönde etkilediği belirtilmiştir (Miles, 2007). Fiziksel aktivite, bireylerin fiziksel ve zihinsel durumlarının yanında benlik algısını, sosyal becerilerini, davranışlarını geliştirmelerine ve gelecekteki yaşamları için olumlu bir yaşam tarzı kurmalarına yardımcı olabilir (Zhao ve Chen, 2018). Fiziksel aktivite, bireylerin fiziksel, mental, sosyal ve duygusal gelişimlerini bir bütün olarak destekleyen sağlıklı yaşam tarzının önemli bir bileşenidir (Sullum vd., 2000).

Dünya sağlık örgütü tarafından fiziksel aktivite, kaslar aracılığıyla üretilen ve enerji harcamasını gerektiren vücudumuzun herhangi bir hareketi olarak tanımlanmıştır (WHO, 2019). Günlük hayatta yapılan yürüme, koşma, bisiklete binme, esneme ve germe fiziksel aktiviteye örnek olarak gösterilebilir (Limoncu, 2017). Literatürde fiziksel aktivite ile ilişkili olarak benlik saygısı, bilişsel işlev, ruh hali, depresyon ve yaşam kalitesi gibi çok sayıda psikolojik etki incelenmiştir (Biddle, 2016). Araştırma sonuçlarına göre fiziksel aktivite, zihinsel ve fiziksel hastalıkları ileri düzeye taşıdığı bilinen bir faktör olan stres eğilimlerini azaltırken, ruh halini ve benlik saygısını artırır (Ghosh ve Datta, 2012). Araştırmalar düzenli fiziksel aktiviteye katılan bireylerin daha iyi bir zihinsel yapıya sahip olduğunu göstermektedir. Araştırmalar sonucunda düzenli fiziksel aktiviteye katılımın dikkati, odaklanmayı, hafızayı, bilişi, dil akıcılığını ve karar vermeyi geliştirdiği tespit edilmiştir (Hallam vd., 2018). Teknolojinin gelişmesiyle birlikte insan hayatının daha kolay hale gelmesi, düzenli fiziksel aktivite yapmasını ve egzersiz yapma seviyesini önemli ölçüde düşürmüştür. Böyle bir durumun ortaya çıkması aynı zamanda toplum içerisinde fiziksel inaktiviteden kaynaklı bazı sağlık sorunlarının ortaya çıkmasına neden olmuştur (Bek, 2008). Özellikle bir takım sosyal, çevresel ve teknolojik değişiklikler genç ve yetişkin bireylerde hareketsiz davranışların artmasına neden olmuştur (Fairclough vd., 2002).

Teknolojiyle birlikte değişim ve gelişim gösteren bir alan da oyun kültürü üzerinde olmuştur. Şehirleşme, internete erişimin kolayca sağlanabilmesi, oyun oynayacak alanların yetersizliği gibi nedenlerle sokakta, parkta, oyun alanlarında oynanan geleneksel oyunlar yerini sanal ortamda bilgisayar, telefon, tablet, oyun konsollarıyla oynanan dijital oyunlara bırakmıştır (Hazar vd., 2017). Dijital (sanal) oyun, ekran, klavye, fare veya joystick gibi kullanıcı ara yüzlerinin bilgisayar yazılımı ile etkileşime girdiği, amaçları ve kuralları olan bir sistem setidir. Dijital oyunlar, kullanıcıya görsel ortam sunan çeşitli teknolojiler kullanılarak programlanmış oyunlardır. Farklı yazılımlarla ve farklı teknolojiler kullanılarak programlanan bu oyunlar, üretildiği ve her an

gelişmekte olan farklı teknolojik kullanım alanlarına göre konsol, bilgisayar ve online oyunlar şeklinde sınıflandırılmaktadır (Gökçearslan ve Durakoğlu, 2014; Kaytanlı, 2011). Dijital oyunlara erişimin kolaylıkla sağlanabilmesi ve gençler arasında popüler olması nedeniyle birçok insan için oyun kültürü farklılaşma göstermiştir. Bireyler oyun oynamak için sadece büyük salonlara gitmek gerekirken günümüzde ev ortamında ve rahatlığında kişisel bilgisayarlarla, konsol ve mobil cihazlarla oyun dünyasına dâhil olabilmektedirler. Aynı zamanda oyunun ilk örneklerinin görselliği ilkel durumda iken bugün arttırılmış gerçeklik (AR) ve sanal gerçeklik (VR) teknolojileri ile hemen gerçek bire bir taklit edilebilir duruma gelmiştir (Samur, 2022). Dijital oyun oynayan bireyler, zamanlarının çoğunu ekran karşısında dijital ürünlerle geçirdikleri için hareketsiz kalırlar. Bu, fiziksel aktivite düzeylerinin azalmasına ve hareketsiz bir hayat biçimi benimsemelerine sebep olur. Özellikle dijital oyunlara bağımlı kişiler, fiziksel aktiviteye katılmak, sosyal ilişkiler geliştirmek, fiziksel ve ruhsal bozukluklarını artırmak gibi aktivitelere zaman ayırmamaktadır. Aynı zamanda kişilerarası iletişimi zayıf olan yalnız bireyler olmalarına da neden olmaktadır (Urlu, 2014). Dijital oyunların, çocuklar, ergenler ve yetişkinler üzerinde gün geçtikçe sosyal davranışların bozulması, iletişim problemleri, eğitim hayatının ve çalışma hayatının olumsuz yönde değişmesine sebep olduğunu ve bu durumun uzun vadede oluşabilecek oyun bağımlılığı sorununa zemin hazırladığı belirtilmektedir.

Dijital oyunlara ayrılan sürenin fazla olması sonucunda hareketsiz yaşam tarzının yanı sıra bireylerin fiziksel ve mental sağlıklarında olumsuzluklar meydana getirebileceği düşünülmektedir. Literatür incelendiğinde dijital oyun kullanıcıları ve fiziksel aktiviteye katılım gösteren bireyler arasındaki ilişkiyi inceleyen çalışmaların çocuklara ve ergen bireylere yönelik olarak yoğunlaştığı; üniversite öğrenimi gören ve bu düzeydeki kişi ve yetişkinlere ilişkin çalışmaların azlığı dikkat çekmektedir (Lee vd., 2023; Mizua vd., 2024; Röglin vd., 2023; Yu, 2022). Bu bağlamda çalışmanın amacı dijital oyun (sanal gerçeklik) katılımcıları ile fiziksel aktiviteye katılan yetişkin bireylerin fiziksel ve mental sağlık çıktıları arasındaki ilişkinin ortaya konulmasıdır.

YÖNTEM

Araştırma Modeli

Bu çalışmada yoğunlukla sosyal bilimlerde kullanılan betimsel tarama yöntemlerinden biri olan ilişkisel tarama yöntemi kullanılmıştır. İlişkisel tarama modelinin amacı çoklu değişkenler arasındaki ilişkinin varlığını belirleyerek, yönünü ve derecesini belirlemektir (Büyüköztürk vd., 2015). Bu araştırma kapsamında dijital oyun katılımcıları ile fiziksel aktivite katılımcılarının algılanan fiziksel ve mental sağlık çıktıları ve değişkenler arasındaki ilişkiyi incelemek amacıyla ilişkisel tarama modeli tercih edilmiştir.

Çalışma Grubu

Kolayda örnekleme yöntemiyle belirlenen çalışmanın araştırma grubunu fiziksel aktiviteye katılan (190) ve dijital oyunlara katılan (61) toplamda 251 yetişkin birey oluşturmaktadır. Araştırma kapsamında katılımcıların 135'i erkek, 116'sı kadındır. Katılımcıların yaşları 18-44 yaş arasında olup yaş ortalamaları 27.88 ± 7.86 'dır.

Veri Toplama Araçları

Çalışmada iki bölümden oluşan veri toplama araçları kullanılmıştır. Veri toplama araçlarının ilk bölümünde katılımcıların cinsiyet, yaş, medeni durum vb. demografik bilgilerine ait sorular sorulmuştur. Veri toplama araçlarının ikinci bölümde ise “Rekreasyonda Algılanan Sağlık Çıktıları Ölçeği” ve “Warwick-Edinburgh Mental İyi Oluş Ölçeği” kullanılmıştır.

Rekreasyonda Algılanan Sağlık Çıktıları Ölçeği (RASCÖ): Gomez ve diğerleri, (2016) tarafından geliştirilmiş ve Yerlisu-Lapa ve diğerleri, (2017) tarafından Türkçe'ye uyarlanmıştır. On altı madde ve üç alt boyuttan oluşan ölçek (1) Kesinlikle Beni İfade Etmiyor – (7) Tamamen Beni İfade Ediyor şeklinde derecelendirilen 7'li likert tipi ölçektir. Çalışma kapsamında ölçeğin toplam güvenirlik kat sayısı .96'dır.

Warwick-Edinburgh Mental İyi Oluş Ölçeği (WE-MİOÖ): Tennant ve diğerleri (2007) tarafından geliştirilmiş ve Keldal (2015) tarafından Türkçeye uyarlanmıştır. On dört pozitif maddeden oluşan ölçek (1) Hiç Katılmıyorum – (5) Tamamen Katılıyorum şeklinde derecelendirilen 5'li likert tipi ölçektir. Ölçekten en az on dört puan, en fazla yetmiş puan alınabilmektedir. Çalışma kapsamında ölçeğin toplam güvenirlik kat sayısı .92'dir.

Araştırma Yayın Etiği

Araştırma kapsamında İstanbul Aydın Üniversitesi Sosyal ve Beşeri Bilimler Etik Kurul Komisyonundan 21/09/2023 tarihli 2023/08 toplantı nolu etik kurul onayı alınmıştır.

Verilerin Toplanması

Araştırma kapsamında gerekli izinlerin alınmasının ardından verilerin toplanması amacıyla Google Forms üzerinden veri toplama araçları oluşturulmuş ve anket yolu ile katılımcılara gönderilmiştir. Online olarak gönüllü katılım formunu onaylayan katılımcılardan elde edilen veriler online ortamda toplanmıştır.

Verilerin Analizi

Araştırma istatistiksel analizleri SPSS 26 İstatistik Paket Programı kullanılarak yapılmıştır. Verilerin analizinde frekans, aritmetik ortalama, standart sapma; t-testi, Anova ve Pearson Correlation testleri kullanılmıştır. Verilerin parametrik testlerin ön şartlarını sağlayıp sağlamadığına verilerin normal dağılım durumu değerleri ve varyansların eşitliği testleri sonuçları incelenerek karar verilmiştir. Ölçeklerin güvenirliklerini belirlemek için de Cronbach Alpha iç tutarlık katsayıları hesaplanmıştır.

BULGULAR

Bu bölümde katılımcıların “Rekreasyonda Algılanan Sağlık Çıktıları Ölçeği” ve “Warwick-Edinburgh Mental İyi Oluş Ölçeği” puan düzeyleri, bu puanlar ile demografik bilgileri ve fiziksel aktivite türü değişkeni arasında anlamlı bir ilişki olup olmadığına ilişkin bulgulara yer verilmiştir.

Tablo 1. Katılımcıların demografik bilgilerinin frekans analizi

Değişken	Kategori	N	%
Cinsiyet	Kadın	116	45,7
	Erkek	135	53,3
Yaş	20 yaş ve altı	51	20,1
	21-30 yaş	121	47,6
	31 yaş ve üstü	79	32,3
Medeni Durum	Bekar	192	75,6
	Evli	59	23,4
Gelir	Düşük	39	15,4
	Orta	186	73,2
	Yüksek	26	10,4
Aktivite Türü	Fiziksel Aktivite	190	75,0
	Online Oyun	61	25,0

Tablo 1’de katılımcıların demografik bilgilerine ait tanımlayıcı veriler yer almaktadır. Araştırmaya 116 kadın (% 45,7) 135 erkek (% 52,1) olmak üzere toplam 251 kişi katılmıştır. Katılımcıların 51’i (%20,1) 20 yaş ve altı, 121’i (47,6) 21-30 yaş arası ve 79’u (%32,3) 31 yaş ve üstü bireylerden oluşmaktadır. Katılımcıların 192’si (%75,6) bekar, 59’u (%23,2) ise evlidir. Katılımcıların 190’ı (%75,0) rekreasyonel aktivite olarak fiziksel aktiviteye katılım sağlamaktadır. Katılımcıların 61’i (%25,0) ise rekreasyonel aktivite olarak dijital oyunlara katılım sağlamaktadır.

Tablo 2. Rekreasyonda algılanan sağlık çıktıları ölçeği ve Warwick-Edinburgh mental iyi oluş ölçeğinin cinsiyet değişkenine göre t- testi sonuçları

Ölçek	Alt Boyutlar	Cinsiyet	n	Ort.	Ss.	t	p
RASÇÖ	Psikolojik Deneyimin Gerçekleşmesi	Kadın	116	5,62	1,29	,21	0,35
		Erkek	135	5,59	1,25		
	Daha Kötü Bir Durumun Önlenmesi	Kadın	116	5,18	1,78	,49	0,40
		Erkek	135	5,07	1,88		
	İyileştirilmiş Durum	Kadın	116	5,60	1,70	,94	0,26
		Erkek	135	5,39	1,88		
WE-MİOÖ	Toplam	Kadın	116	55,05	9,23	0,42	0,28
		Erkek	135	54,52	10,34		

Tablo 2’de katılımcıların Rekreasyonda Algılanan Sağlık Çıktıları Ölçeği ve Warwick-Edinburgh Mental İyi Oluş Ölçeğinin cinsiyet değişkenine göre t- testi sonuçları verilmiştir. Rekreasyonda Algılanan Sağlık Çıktıları Ölçeği alt boyut puanları cinsiyet değişkenine göre analiz sonuçları incelendiğinde tüm alt boyutlarda kadın katılımcılar ile erkek katılımcıların ortalama puanları arasında istatistiksel olarak anlamlı bir farklılık bulunamamıştır. ($p>0,05$). Warwick-Edinburgh

Mental İyi Oluş Ölçeğinin cinsiyet değişkenine göre t- testi sonuçları incelendiğinde ise benzer şekilde kadın katılımcılar ile erkek katılımcıların ortalama puanları arasında istatistiksel olarak anlamlı bir farklılık olmadığı görülmektedir ($t=0,42$; $p>0,05$).

Tablo 3. Rekreasyonda algılanan sağlık çıktıları ölçeği ve Warwick-Edinburgh mental iyi oluş ölçeğinin aktivite türü değişkenine göre t- testi sonuçları

Ölçek	Alt Boyutlar	Aktivite Türü	n	Ort.	Ss.	t	p
RASÇÖ	Psikolojik Deneyimin Gerçekleşmesi	Fiziksel Aktivite	190	5,89	1,12	7,08	0,00*
		Dijital Oyun	61	4,65	1,28		
	Daha Kötü Bir Durumun Önlenmesi	Fiziksel Aktivite	190	5,53	1,59	7,48	0,00*
		Dijital Oyun	61	3,67	1,89		
	İyileştirilmiş Durum	Fiziksel Aktivite	190	6,00	1,36	9,94	0,00*
		Dijital Oyun	61	3,72	1,98		
WE-MioÖ	Toplam	Fiziksel Aktivite	190	55,54	9,37	2,31	0,02*
		Dijital Oyun	61	52,14	10,91		

*($p<0,05$)

Tablo 3'te Rekreasyonda Algılanan Sağlık Çıktıları Ölçeği ve Warwick-Edinburgh Mental İyi Oluş Ölçeğinin aktivite türü değişkenine göre t- testi sonuçları sunulmuştur. Rekreasyonda Algılanan Sağlık Çıktıları Ölçeği alt boyutlarının aktivite türü değişkenine göre analiz sonuçları incelendiğinde "Psikolojik Deneyimin Gerçekleşmesi" alt boyutunda fiziksel aktiviteye katılan katılımcıların ortalama puanı ($Ort=5,89$; $t=7,08$; $p<0,05$) dijital oyun katılımcılarının ortalama puanından ($Ort=4,65$; $t=7,08$; $p<0,05$) daha yüksektir. "Daha Kötü Bir Durumun Önlenmesi" alt boyut puanları incelendiğinde fiziksel aktiviteye katılan katılımcıların ortalama puanının ($Ort=5,53$; $t=7,48$; $p<0,05$) dijital oyun katılımcılarının ortalama puanından ($Ort=3,65$; $t=7,48$; $p<0,05$) daha yüksek olduğu görülmektedir. Bir diğer alt boyut olan "İyileştirilmiş Durum" alt boyut puanları incelendiğinde fiziksel aktiviteye katılan katılımcıların ortalama puanlarının ($Ort=6,00$; $t=9,94$; $p<0,05$) dijital oyun katılımcılarının ortalama puanlarından ($Ort=3,72$; $t=9,94$; $p<0,05$) daha yüksek olduğu sonucu elde edilmiştir. Verilerin analizinden elde edilen bu sonuca göre Rekreasyonda Algılanan Sağlık Çıktıları Ölçeğinin tüm alt boyutlarında fiziksel aktiviteye katılan bireylerin ortalama puanları dijital oyunlara katılan bireylerin ortalama puanlarından daha yüksektir. Fiziksel aktiviteye katılan bireylerin algılanan sağlık çıktıları düzeyinin dijital oyun oynayan bireylerin algılanan sağlık çıktıları düzeylerinden daha yüksek olduğu söylenebilir. Warwick-Edinburgh Mental İyi Oluş Ölçeğinin aktivite türü değişkenine göre t- testi sonuçları incelendiğinde fiziksel aktiviteye katılan bireylerin ortalama puanlarının ($Ort=55,54$; $t=2,31$; $p<0,05$) dijital oyun katılımcılarının ortalama puanlarından ($Ort=52,14$; $t=2,31$; $p<0,05$) daha yüksek olduğu görülmektedir. Bu sonuca göre fiziksel aktiviteye katılan bireyler mental iyi oluş düzeyleri bakımından dijital oyun katılımcılarından daha iyi durumdadır denebilir (Tablo 3).

Tablo 4. Rekreasyonda algılanan sağlık çıktıları ölçeği ve Warwick-Edinburgh mental iyi oluş ölçeğinin gelir durumu değişkenine göre ANOVA sonuçları

Ölçek	Faktör	FAŞD	N	Ort.	Ss.	f	p
RASÇÖ	Psikolojik Deneyimin Gerçekleşmesi	Düşük	39	5,67	1,37	,886	0,41
		Orta	186	5,55	1,26		
		Yüksek	26	5,90	1,15		
	Daha Kötü Bir Durumun Önlenmesi	Düşük	39	5,43	1,68	,678	0,50
		Orta	186	5,05	1,87		
		Yüksek	26	5,51	1,79		
	İyileştirilmiş Durum	Düşük	39	5,88	1,44	1,685	0,18
		Orta	186	5,36	1,87		
		Yüksek	26	5,76	1,79		
WE-MİOÖ	Toplam	Düşük	39	51,58	13,25	3,074	0,04*
		Orta	186	55,07	8,57		
		Yüksek	26	57,34	11,48		

*(p<0,05)

Tablo 4'te Rekreasyonda Algılanan Sağlık Çıktıları Ölçeği ve Warwick-Edinburgh Mental İyi Oluş Ölçeğinin gelir durumu değişkenine göre ANOVA sonuçları sunulmuştur. Rekreasyonda Algılanan Sağlık Çıktıları Ölçeği alt boyut puanları incelendiğinde “psikolojik deneyimin gerçekleşmesi”, “daha kötü bir durumun önlenmesi” ve “iyileştirilmiş durum” alt boyutlarının tümünde gelir durumu değişkenine göre istatistiksel olarak anlamlı bir farklılığın olmadığı sonucuna ulaşılmıştır (p>0,05). Warwick-Edinburgh Mental İyi Oluş Ölçeği toplam puanının gelir durumu değişkenine göre analiz sonuçları incelendiğinde ise yüksek gelir düzeyine sahip katılımcıların lehine istatistiksel olarak anlamlı farklılık olmadığı sonucu elde edilmiştir (p<0,05). Analiz sonuçlarına göre anlamlı farklılığın olduğu değişkenler incelendiğinde düşük gelir seviyesine sahip bireylerin ortalama puanlarının 51,58 (f=3,074; p<0,05) olduğu, gelir durumunun orta seviye olduğu bireylerin ortalama puanlarına bakıldığında 55,07 (f=3,074; p<0,05) olduğu ve yüksek gelir seviyesine sahip bireylerin ortalama puanlarının ise 57,34 (f=3,074; p<0,05) olduğu görülmektedir. Elde edilen bu sonuca göre gelir seviyesi arttıkça mental iyi oluş durumunun iyiye gittiği söylenebilir (Tablo 4).

Tablo 5. Rekreasyonda algılanan sağlık çıktıları ölçeği ve Warwick-Edinburgh mental iyi oluş ölçeği korelasyon analizi sonuçları

Ölçek	Rekreasyonda Algılanan Sağlık Çıktıları
Mental İyi Oluş	0.384**

**p<0.01

Tablo 5'te katılımcıların Rekreasyonda Algılanan Sağlık Çıktıları Ölçeği ve Warwick-Edinburgh Mental İyi Oluş Ölçeği toplam puanları arasındaki korelasyon analizi sonuçları verilmiştir. Analiz sonuçları incelendiğinde Rekreasyonda Algılanan Sağlık Çıktıları Ölçeği ve Warwick-Edinburgh Mental İyi Oluş Ölçeği toplam puanları arasında yüksek düzeyde anlamlı bir ilişki olduğu görülmektedir.

TARTIŞMA

Dijital oyun katılımcıları ve fiziksel aktivite katılımcılarının algılanan fiziksel-mental sağlık çıktılarının incelendiği bu araştırmadan elde edilen veriler bu bölümde tartışılmıştır. Katılımcıların algılanan sağlık çıktıları ile mental iyi oluş düzeylerinin orta seviyenin üstünde olduğu görülmektedir. Buna karşın cinsiyet değişkeni açısından rekreasyonda algılanan sağlık çıktıları ölçeği alt boyutlarında istatistiksel açıdan anlamlı farklılık olmadığı görülmüştür. İlgili literatür incelendiğinde cinsiyet değişkeni ile rekreasyonda algılanan sağlık çıktıları arasında anlamlı bir ilişkinin olmadığını ortaya koyan araştırmalar olduğu görülmektedir (Elçi vd., 2019; Huebner, 2004; Tuncer, 2023). Çalışmadan elde edilen sonuçlardan bir diğerine göre de cinsiyet değişkeni ile mental iyi oluş ölçeği arasında istatistiksel açıdan anlamlı farklılık bulunamamıştır. İlgili literatür incelendiğinde araştırma sonuçlarımıza benzer şekilde cinsiyet değişkeni ile mental iyi oluş durumu değişkeni arasında anlamlı farklılığın görülmediği araştırma sonuçları bulunmaktadır (Elmas vd., 2021; Wright vd., 2006). Elde edilen bu sonuç literatür bağlamında değerlendirildiğinde rekreasyonel aktivitelere katılım ve elde edilen faydaların bireysel tatmin sağlaması, algılanan tatmin ve algılanan fiziksel-mental iyi oluş halini etkilemesi nedeniyle cinsiyet fark etmeksizin rekreasyonel aktivitelere katılım sağlayan her bireyin öznel iyi oluş haline fayda sağlamasından kaynaklandığı düşünülmektedir.

Katılımcıların ilgilendiği rekreasyonel aktivite türü değişkenine göre rekreasyonda algılanan sağlık çıktıları ölçeği analiz sonuçlarına göre “psikolojik deneyimin gerçekleşmesi”, “daha kötü bir durumun önlenmesi” ve “iyileştirilmiş durum” gibi ölçeğin tüm alt boyutlarında fiziksel aktiviteye katılım gösteren kişilerin puan ortalamaları dijital oyunlara katılım gösteren kişilerin puan ortalamalarından daha yüksektir. Elde edilen bir diğer sonuca göre ise rekreasyonel aktivite türü değişkenine göre mental iyi oluş ölçeği toplam puanında fiziksel aktiviteye katılım sağlayan bireylerin lehine anlamlı farklılık bulunmaktadır. İlgili literatür incelendiğinde araştırma sonuçlarımıza benzer şekilde fiziksel aktiviteye katılım gösteren kişilerin fiziksel aktiviteye göstermeyen kişilere göre algılanan sağlık çıktıları düzeyinin yüksek seviyede olduğuna dair araştırma sonuçları yer almaktadır (Friedenreich, 2010; Mutrie vd., 2007; Tuncer, 2023). Literatürde yapılan bir diğer araştırma sonucuna göre ise açık alanda yapılan rekreasyonel fiziksel aktivitelerin bireylerin fiziksel, sosyal ve psikolojik iyi oluş düzeylerini pozitif yönde etkilediği şeklindedir (İbrahim ve Cordes, 2002). Her ne kadar fiziksel aktiviteye katılımın fiziksel, mental, sosyal faydaları bulunsun da teknolojik gelişmelerle birlikte sedanter yaşam ve hareketsizlik sürelerinde artış olduğu görülmektedir. Sedanter yaşam tarzını keyifli hale getirdiği düşünülen dijital oyunlar günümüzde popüler olsa da bunların fiziksel ve mental sağlığı olumsuz etkilediği bu araştırmada elde edilen bulgularla ortaya konulmaktadır. Araştırmaya katılan bireyler algıladıkları fiziksel ve mental sağlık beyanlarında olumsuz işaretleme yapmış olmalarına rağmen var olan bu olumsuz duygu durumlarının dijital oyunlara katılımın sedanter yaşam tarzını desteklemesinden kaynaklandığını bilmiyor olabilirler. Bu bağlamda yapılan araştırmanın literatüre önemli katkılar sağlayacağı düşünülmektedir.

Çalışmadan elde edilen diğer bir sonuca göre gelir durumu değişkeni açısından rekreasyonda algılanan sağlık çıktıları ölçeğinin tüm alt boyutlarında istatistiksel olarak anlamlı bir farklılık

bulunmamıştır. Araştırma sonuçlarımızdan farklı olarak literatürde gelir durumunun rekreasyonda algılanan sağlık çıktılarının alt boyut puanlarında anlamlı farklılığın görüldüğü araştırma sonuçları bulunmaktadır (Özdemir ve Esenkaya, 2019; Sarıyıldız, 2021; Serdar, 2020). Gelir durumu değişkeni ile mental iyi oluş ölçeği arasındaki ilişki incelendiğinde gelir durumu arttıkça mental iyi oluş düzeyinin de arttığı sonucuna ulaşılmıştır. Her ne kadar algılanan fiziksel sağlık çıktılarında bir farklılık görülme de gelir durumunun bireylerin mental sağlıklarını önemli derecede etkilediği düşünülmektedir.

Rekreasyonda algılanan sağlık çıktıları ile mental iyi oluş ölçeği toplam puanları arasındaki ilişki düzeyi analiz edildiğinde yüksek düzeyde anlamlı bir ilişki olduğu sonucuna ulaşılmıştır. Literatür incelendiğinde ilgili değişkenlerin korelasyonunun incelendiği bir araştırmaya rastlanmamıştır. Bu bağlamda literatüre katkı sağlayacağı düşünülmektedir. Ayrıca bireylerin fiziksel ve mental sağlıklarının karşılıklı olarak birbirini etkilediği ve birbirinden etkilendiği düşünülmektedir. Bu bağlamda sedanter yaşam tarzına sahip bireyler veya dijital oyun gibi pasif rekreatif aktivitelere katılım sağlayan bireyler bu etkinlikler ile serbest zamanlarını doldursalar da fiziksel açıdan olduğu gibi mental açıdan da sağlık ve iyilik düzeyi olarak olumlu algılara sahip olamamaktadırlar.

SONUÇ VE ÖNERİLER

Araştırma sonucunda rekreasyonel aktivite türü ve gelir durumu değişkenine göre rekreasyonda algılanan sağlık çıktıları ve mental iyi oluş düzeylerinin anlamlı olarak farklılaştığı sonucuna ulaşılmıştır. Cinsiyet değişkeni ile rekreasyonda algılanan sağlık çıktıları ve mental iyi oluş düzeylerinin ise istatistiksel açıdan anlamlı farklılık göstermediği görülmüştür. Bunun yanı sıra rekreasyonda algılanan sağlık çıktıları ve mental iyi oluş düzeyleri arasında pozitif yönde yüksek düzeyde anlamlı ilişki olduğu sonucu elde edilmiştir.

Araştırma sonucunda elde edilen bulgular ışığında bireylerin fiziksel olarak aktif olabilecekleri rekreasyonel aktivitelere yönlendirilmeleri ve bu konuda bilgilendirilmeleri, aktif bir yaşam tarzının benimsenmesinin önemi konusunda bilgilendirilmeleri sağlanabilir. Olumlu serbest zaman deneyimleri yaşayabilecekleri amaçlı ve planlı etkinlikler düzenlenmesi önerilebilir. Bunun yanı sıra gelecekte yapılacak olan araştırmalar için dijital oyunların farklı değişkenler üzerine etkilerinin ortaya konulacağı şekilde çeşitlendirilmeleri önerilebilir.

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Etik Kurul İzni ile ilgili Bilgiler

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Sağlıkla İlgili Fiziksel Uygunluk Karnesinin EUROFIT, ASSO Project ve Connecticut Test Bataryalarıyla Karşılaştırmalı Analizi

Rıdvan KARA¹ , Süleyman ULUPINAR^{2*} , Buket SEVİNDİK AKTAŞ² 

¹Erzurum Teknik Üniversitesi, Sağlık Bilimleri Enstitüsü, Erzurum, Türkiye

²Erzurum Teknik Üniversitesi, Spor Bilimleri Fakültesi, Erzurum, Türkiye

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Öz

Bu çalışmanın amacı, Sağlıkla İlgili Fiziksel Uygunluk Karnesinde (SİFUK) yer alan testlerin uluslararası standartlara uygunluğunu belirlemek ve global test bataryaları olarak kabul edilen European Test of Physical Fitness (EUROFIT), Adolescents and Surveillance System for the Obesity prevention (ASSO Project) ve Connecticut Physical Fitness Assessment (Connecticut) ile karşılaştırmaktır. Bu çalışmaya 5-8. sınıf düzeyinde öğrenim gören 40 öğrenci gönüllü olarak katılmıştır. Katılımcılara test bataryalarında yer alan egzersizlerin tümü uygulanmıştır. Farklı test bataryalarında aynı motorik özelliği ölçmek için kullanılan egzersizler arasındaki ilişkiler korelasyon analizi kullanılarak incelenmiştir. Ayrıca test bataryalarının içerdiği değişken setleri arasındaki ilişkiyi belirlemek için kanonik korelasyon analizi kullanılmıştır. SİFUK'ta esnekliği ölçmek için kullanılan otur-uzan testi sonuçlarının diğer test bataryalarında yer alan esneklik sonuçları ile büyük ölçüde benzer olduğu bulunmuştur. Ancak SİFUK'ta kas dayanıklılığını ölçmek için kullanılan mekik testi sonuçlarının global test bataryalarında yer alan koşma temelli egzersizler ile ilişkisinin 0,291–0,460 arasında olduğu tespit edilmiştir. Benzer şekilde SİFUK'ta kas kuvvetini ölçmek için kullanılan şınav testi sonuçlarının global test bataryalarında yer alan diğer kuvvet testleri ile arasındaki ilişkinin 0,210–0,438 arasında olduğu bulunmuştur. Ayrıca SİFUK ve global test bataryaları arasındaki bütünsel ilişkiyi tespit etmek için yapılan kanonik korelasyon analizi sonuçları SİFUK ve Connecticut arasında yüksek düzeyde bir ilişki (0,796) olduğunu gösterirken; SİFUK ve diğer test bataryaları arasında (0,238 ve 0,273) düşük düzeyde ilişkiler olduğunu ortaya koymaktadır. Sonuç olarak SİFUK test bataryasının kapsayıcılığını artırmak amacıyla Connecticut test bataryasının uygun bir referans olduğu ve bir dayanıklılık koşusunun dahil edilmesi ile SİFUK'un diğer test bataryalarıyla daha yüksek ilişkili ortak bir değişken setine sahip olabileceği düşünülmektedir.

Anahtar kelimeler: Fiziksel uygunluk, EUROFIT, ASSO Project, Connecticut, SİFUK, Fiziksel performans

Comparative Analysis of the Health-Related Physical Fitness Scorecard with EUROFIT, ASSO Project, and Connecticut Test Batteries

Abstract

This study aims to determine the conformity of the tests in the Health-Related Physical Fitness Scorecard (SIFUK) with international standards and to compare them with the European Test of Physical Fitness (EUROFIT), Adolescents and Surveillance System for the Obesity Prevention (ASSO Project) and Connecticut Physical Fitness Assessment (Connecticut), which are accepted as global test batteries. Forty students in grades 5-8 participated voluntarily in this study. All of the exercises in the test batteries were administered to the participants. The relationships between the exercises used to measure the same motoric trait in different test batteries were analyzed using correlation analysis. In addition, canonical correlation analysis was used to determine the relationship between the sets of variables included in the test batteries. It was found that the results of the sit-stand test used to measure flexibility in SIFUK were largely similar to the flexibility results in the other test batteries. However, the shuttle test results used to measure muscular endurance in SIFUK were found to have a correlation between 0.291-0.460 with the running-based exercises in the global test batteries. Similarly, the relationship between the push-up test results used to measure muscle strength in SIFUK and other strength tests in the global test batteries was found to be between 0.210-0.438. In addition, the results of the canonical correlation analysis conducted to determine the holistic relationship between SIFUK and global test batteries show that there is a high-level relationship between SIFUK and Connecticut (0.796), while there are low-level relationships between SIFUK and other test batteries (0.238 and 0.273). As a result, it is thought that the Connecticut test battery is a suitable reference to increase the comprehensiveness of the SIFUK test battery, and with the inclusion of an endurance run, the SIFUK can have a common set of variables that are more highly correlated with other test batteries.

Keywords: Physical fitness, EUROFIT, ASSO project, Connecticut, SİFUK, Physical performance

* **Sorumlu Yazar:** Süleyman Ulupınar, **E-posta:** Suleyman.ulupinar@erzurum.edu.tr

GİRİŞ

Fiziksel uygunluk testleri, bireylerin sağlık durumlarını değerlendirmenin ve uygun egzersiz programları oluşturma temel araçlarıdır (Bilim vd., 2016; Nalbant, 2018; Wouters vd., 2020). Bu testler bireylerin fiziksel aktivite seviyelerini anlamalarına ve sağlıklı yaşam tarzları benimsemelerine yardımcı olur (Güler, 2023; Nuzzo, 2020). Modern çağda yaşanan teknolojik ve yaşam tarzı değişimleri, fiziksel aktivite azlığına ve dolayısıyla artan sağlık sorunlarına neden olmaktadır (Gibson vd., 2024; Turan vd., 2023; Ulupınar ve Özbay, 2023). Bu bağlamda, çocuklar da dahil olmak üzere farklı yaş gruplarındaki bireylerin fiziksel uygunluk seviyeleri üzerine yapılan çalışmaların önemi giderek artmaktadır (Jurak vd., 2023; Ługowska vd., 2023).

Önceki tanımlamalardan farklı olarak, günümüzde fiziksel uygunluk, bireylerin genel sağlık ve refahını iyileştiren çok boyutlu bir kavram olarak kabul edilmektedir (Huerta-Urbe vd., 2023; Mohajan ve Mohajan, 2023). Bu genişleyen anlayış, fiziksel uygunluğun bireylerin yaşam kalitesini yükseltme ve kronik hastalıkları önleme çabalarının merkezine yerleşmesini sağlamıştır (Calella vd., 2023; Encarnação vd., 2023). Fiziksel uygunluk testleri, bireylerin kardiyovasküler dayanıklılık, kas kuvveti, esneklik ve denge gibi çeşitli yeteneklerini ölçmekte ve bu bilgiler ışığında kişiselleştirilmiş sağlık hedeflerine ulaşmalarına yardımcı olmaktadır (Gibson vd., 2024; Ulupınar ve Özbay, 2020). Ancak, bu testlerin güvenilirliği, uygulanabilirliği ve test sonuçlarının genel bir çerçevede değerlendirilmesi gibi konularda bazı zorluklar bulunmaktadır (King-Dowling vd., 2024; Ulupınar ve Özbay, 2021).

Sağlık Bakanlığı tarafından başta obezite olmak üzere birçok benzer hastalığın önüne geçme hususunda toplumu bilinçlendirmek, düzenli beslenmeye teşvik etmek ve hareketli bir yaşam sürmesinde öncü olmak hedefiyle "Türkiye Sağlıklı Beslenme ve Hareketli Hayat Programı" hayata geçirilmiştir (T.C. Sağlık Bakanlığı, 2019; Ulupınar ve Özbay, 2021). Bu program kapsamında öğretim kurumlarında obezite ile mücadele etme, yeterli ve düzenli beslenme, hareketli bir yaşam tarzı benimseme gibi başlıklar yer almaktadır. SİFUK bir eğitim yılının başında ve sonunda olacak şekilde yılda iki kez uygulanmaktadır. SİFUK ile ulusal çapta veri akışı sağlandığı için yapılan ölçümlerin kapsayıcı ve güvenilir olması oldukça önemlidir (Ulupınar ve Özbay, 2021).

Sağlıkla İlgili Fiziksel Uygunluk Karnesi (SİFUK) ve global test bataryaları olan EUROFIT, ASSO Project ve Connecticut arasındaki karşılaştırmalar, bu testlerin bireylerin fiziksel uygunluk düzeylerini değerlendirmek için nasıl çeşitlilik gösterdiğini ortaya koyabilir. Temel fiziksel parametreler açısından SİFUK, ağırlık, boy uzunluğu, Beden Kitle İndeksi (BKİ), mekik, sınav ve Otur-Uzan Testi gibi ölçümleri içermektedir. Bu ölçümler, bireylerin genel vücut kompozisyonunu, kas kuvvetini ve esnekliğini değerlendirir. EUROFIT bataryası, SİFUK'un bazı temel testlerini içermekle birlikte, Flamingo Denge Testi ve El-Kavrama Kuvveti gibi özel yetenek ölçümleri eklemektedir (Grgic, 2023). Bu test bataryası SİFUK'a kıyasla denge ve kavrama kuvveti gibi spesifik motorik yetenekleri ölçme eğilimi gösterir. Ayrıca, bu batarya hız,

dayanıklılık ve sürat gibi parametreleri ölçmek için 10×5 metre mekik koşusu ve 20 metre mekik koşusu gibi testleri de barındırdığı için çok daha geniş kapsamlı olarak kabul edilmektedir.

ASSO Project ise, özellikle genç popülasyonun obezite önleme perspektifinden değerlendirilmesi için tasarlanmıştır (Bianco vd., 2016). Bu test bataryası; el kavrama kuvveti, klasik mekik testi, 4×10 metre mekik koşusu ve 20 metre mekik koşusu gibi testlerle fiziksel performansı ölçmenin yanı sıra, özellikle çocuk ve ergenlerde kardiyovasküler dayanıklılığı ve vücut kompozisyonunu da değerlendirmektedir. Connecticut test bataryası, BKİ ve modifiye otur-eriş testi gibi ortak ölçümleri içerirken, 1-Mil Koşu/Yürüyüş Testi gibi aerobik kapasiteyi değerlendiren spesifik bir testi de barındırmaktadır (Melendez, 2004). Kas kuvveti ve dayanıklılığını ölçmek için ise SİFUK'a benzer şekilde sınav ve mekik testlerini kullanmaktadır.

Her bir batarya, genel fiziksel uygunluk kriterlerini ölçmekle birlikte, farklı yaştaki popülasyonlara ve spesifik fitness bileşenlerine odaklanarak çeşitlenmektedir. SİFUK, genel bir değerlendirme aracı olarak ortak parametreler sunarken, diğer testler belirli ölçümlere ek olarak motorik yetenekler, kardiyovasküler dayanıklılık ve spesifik kas gruplarının kuvvetini değerlendirmek için daha fazla çeşitlilik sunmaktadır (İnce ve Hünük, 2013; Salman vd., 2018). Sonuç olarak, bu test bataryalarının her birinin, bireylerin farklı fiziksel uygunluk seviyelerini ve yeteneklerini değerlendirmede güçlü yönleri ve sınırlılıkları vardır. Bu çalışmanın temel amacı, Türkiye'de kullanılan SİFUK uygulamasının fiziksel uygunluk ölçümlerinde uluslararası niteliğe sahip olan EUROFIT, ASSO Project ve Connecticut test bataryalarıyla karşılaştırmalı bir analizini gerçekleştirerek, SİFUK'un kapsamını ve uygulanabilirliğini değerlendirmektir. Bu karşılaştırma, SİFUK ve diğer küresel test bataryaları arasındaki benzerlikleri ve farklılıkları detaylı bir şekilde incelemeyi ve bu uygulamanın kapsamını artırmak için bilimsel alt yapısı olan öneriler sunmayı amaçlamaktadır. Bu çalışmanın temel hipotezi, Sağlıkla İlgili Fiziksel Uygunluk Karnesi uygulamasının, uluslararası test bataryaları olan EUROFIT, ASSO Project ve Connecticut ile karşılaştırıldığında içerdiği fiziksel uygunluk bileşenleri üzerindeki etkinliğinin benzer olduğu ancak dayanıklılık performansını ölçen bir test içermediği için diğer test bataryalarından farklılaşabileceği yönündedir.

METOT

Araştırmanın Modeli

Bu çalışma, farklı fiziksel uygunluk test bataryaları arasındaki benzerlikleri ve farklılıkları analiz etmeyi amaçlayan deneysel ve karşılaştırmalı bir araştırma modeli kullanmaktadır. Araştırma, kontrollü bir müdahale içermeyen ve aynı katılımcı grubu üzerinde tekrarlı ölçümler gerçekleştirilen ilişkisel bir tasarım benimsemektedir.

Araştırma Grubu

Bu çalışma, 2022-2023 Eğitim-Öğretim yılı içinde 5-8. sınıf seviyesinde eğitim gören ve çalışmaya gönüllü olarak katılmayı kabul eden 22 kadın ve 18 erkek olmak üzere toplam 40

katılımcı ile gerçekleştirilmiştir. Bu araştırmada katılımcıların seçimi, çalışma süreci boyunca düzenli fiziksel aktiviteyi devam ettirebilecek uygun sağlık koşullarına sahip bireyler arasından yapılmıştır. Katılımcıların sağlık durumları detaylı bir ön değerlendirme sürecinden geçirilerek, sürekli fiziksel aktivite gerektiren testler için gerekli genel sağlık kriterlerini karşıladıkları teyit edilmiştir. Bu kapsamda, aktif spor yapmalarına engel teşkil edebilecek herhangi bir kronik hastalığı veya fiziksel aktivite sınırlaması olan öğrenciler, çalışmanın dışında tutulmuştur. Bu önlem, araştırmanın güvenliğini ve veri bütünlüğünü artırma amacı taşımaktadır. Böylece, elde edilen sonuçların güvenilirliği ve çalışmanın genel sağlık ve fiziksel performans üzerine olan etkilerinin doğru bir şekilde değerlendirilmesi sağlanmıştır. Testlerin uygulanmasından önce, katılımcılara yönelik bir alıştırma seansı düzenlenmiş ve katılımcılara testlerin nasıl uygulanacağı gösterilmiş ve her bir test için pratik yapma imkanı sağlanmıştır.

Veri Toplama Araçları

Sağlıkla İlgili Fiziksel Uygunluk Karnesi (SİFUK): Vücut ağırlığı, dijital hassasiyet sağlayan bir tartı kullanılarak ölçülmüş ve kilogram (kg) cinsinden kaydedilmiştir. Boy uzunluğu ölçümünde ise, sabit bir boy ölçer kullanılmış ve santimetre (cm) cinsinden kayıt altına alınmıştır. Beden Kitle İndeksi (BKİ), katılımcıların vücut ağırlığının kilogram (kg) cinsinden değeri ile boy uzunluklarının metre (m) cinsinden karesinin oranı alınarak hesaplanmıştır.

Şınav testi sırasında, katılımcılar plank pozisyonunda kollarını omuz genişliğinde açmış ve belirlenen kurallara uygun olarak vücutlarını yere doğru alçaltıp yükseltmişlerdir. Bu sırada, gövdenin düz bir hat oluşturması, kalçanın ne düşmesi ne de yukarı kalkması ve dirseklerin vücuda yakın tutulması gibi kriterlere dikkat edilmiştir. Mekik testi sırasında, katılımcılar sırtlarını eğmeden, elleri ense altında birleştirilmiş, dizleri 90 derece açıda bükülü ve ayakları yerde sabit bir şekilde mekik çekmişlerdir. Omuzların zemine teması sağlanarak yapılan bu egzersiz sırasında, gövde hareketinin bir standart oluşturması sağlanmıştır. Otur-eriş testinde ise bu test için özel olarak geliştirilmiş bir sehpa kullanılmıştır (Baseline 12-1086 Sit and Reach Trunk Flexibility Box, 76×30×33 cm, Deluxe). Test sırasında katılımcılar zemin üzerine oturmuş ve ayaklarını uzatarak, gövdelerini öne doğru eğerek elleriyle en uzak mesafeye ulaşmayı hedeflemişlerdir. Bu doğrultuda en uzak noktaya ulaşan elin uç kısmının temas ettiği mesafe santimetre (cm) cinsinden kaydedilmiştir. İki denemeden daha iyi olan skor, geçerli kabul edilmiştir.

EUROFIT Test Bataryası: SİFUK ile ortak olan boy uzunluğu, BKİ ve Otur-Eriş testleri yukarıda anlatıldığı gibi gerçekleştirilmiştir. EUROFIT'e özgü diğer testlerden Flamingo Denge Testi sırasında, 50 cm uzunluğunda ve 3 cm genişliğindeki bir giriş üzerinde, bireyler tek ayakları üzerinde dengede kalmaya çalışmışlardır. Test süresi boyunca (60 sn.) meydana gelen denge kayıpları sayılmış ve kaydedilmiştir. İlk 30 saniyede 15'ten fazla denge kaybı yaşanması halinde ise test sonlandırılmıştır. Kol Hareket Sürati testi, bireylerin süratlerini ölçmek amacıyla iki plastik disk arasında hızlı bir şekilde dokunmalarını gerektirmektedir. İki disk arası mesafe 80 cm olarak ayarlanmış ve bireylerin disklerle toplamda 25 kez (50 temas) dokunmak için harcadıkları zaman, saniye cinsinden kaydedilmiştir. Durarak Uzun Atlama testi, bireylerin statik bir pozisyondan ne kadar uzaklığa sıçrayabileceklerini değerlendirmek için kullanılmıştır. Katılımcılar, belirlenen

başlangıç çizgisinden kollarını kullanarak maksimum mesafeye sıçramış ve bu test iki kez gerçekleştirilerek en iyi performans santimetre olarak kaydedilmiştir. El-Kavrama Kuvveti Testi, bireylerin kavrama kuvvetini ölçmek için bir dinamometre aleti ile gerçekleştirilmiştir. Bu test, her bir katılımcı için iki kez tekrarlanmış ve elde edilen en iyi performans kaydedilmiştir. 30 Saniye Mekik Testi, belirlenen sürede yapılabilecek maksimum mekik sayısını ölçmek için kullanılmıştır.

Bükülü Kol Asılma Testi, bireylerin bir bara asılı şekilde ne kadar süre dayanabileceklerini test etmek için kullanılmıştır. Katılımcılar, çene bölgesini barın üstüne getirecek şekilde asılmış ve maksimum tutunma süresi kaydedilmiştir. 10 × 5 metre Mekik Koşusu, bireylerin belirlenen 5 metrelik mesafeyi 10 kez olmak üzere en hızlı şekilde gidip gelmelerini içermektedir. Bu süreçte elde edilen toplam zaman kaydedilmiştir. 20 metre Mekik Koşusu ise, katılımcıların bir sinyal sesine uyum sağlayarak 20 metre mesafede ne kadar süre ve kaç tur gidip gelebileceklerini ölçmeyi amaçlamaktadır. Bu testte koşu zamanı ve tamamlanan tur sayısı kayıt altına alınmıştır.

ASSO Project Test Bataryası: Bu test bataryası, özellikle çocuklar ve gençler arasında fiziksel performansın çeşitli yönlerini değerlendirmek için tasarlanmıştır. El kavrama kuvveti, durarak uzun atlama ve 20 metre mekik koşusu testleri, yukarıda açıklanan yöntemlerle gerçekleştirilmiştir. ASSO PROJECT'e özgü olan 4×10 Metre Mekik Koşusu testi ise katılımcıların hız ve çevikliğini değerlendiren önemli bir ölçümdür. Bu testte, katılımcılar başlama çizgisinin arkasında başlangıç pozisyonunu alır ve verilen komutla, 10 metre mesafede yerleştirilmiş konilere veya çizgilere doğru en hızlı şekilde gidip gelmeye çalışırlar. Bu işlem, toplamda 4 tur olacak şekilde tekrarlanır ve tamamlanma süresi kaydedilir.

Connecticut Test Bataryası: Bu test bataryası, bireylerin aerobik kapasite, esneklik ve genel fiziksel uygunluğunu değerlendirmek için özel olarak tasarlanmıştır. Bu bataryadaki Beden Kitle İndeksi (BKİ), Mekik ve Şınav testleri daha önce açıklandığı şekilde uygulanmıştır. Klasik ölçümlerden kısmi olarak farklı olan Modifiye Otur-Eriş Testi, esneklik ölçümüne odaklanan bir başka testtir. Katılımcılar, sert bir zemine sırtlarını dayayarak oturmuş ve öne doğru uzanarak elleriyle en uzak noktaya ulaşmaya çalışmışlardır. Bu versiyonda, ayaklar düz bir şekilde öne uzatılır ve genellikle bacakların altına bir destek konur (örneğin, bir kutu veya benzeri bir nesne). Bu uygulama, pelvisin biraz daha öne eğilmesini ve alt sırt bölgesine daha az baskı uygulanmasını sağlar. Bu test sırasında, bireyin öne doğru uzanırken ulaşabildiği maksimum mesafe ölçülmüş ve bu mesafe, bireyin alt ekstremitte esnekliğinin bir göstergesi olarak kaydedilmiştir. 1-Mil Koşu/Yürüyüş Testi ise, katılımcıların aerobik kapasitesini değerlendirmek için kullanılmıştır. Bu test, katılımcıların 1609 metrelik (bir mil) mesafeyi mümkün olan en kısa sürede yürüyerek veya koşarak tamamlamalarını gerektirmektedir. Testin tamamlanma süresi, katılımcıların kardiyovasküler dayanıklılık seviyesi hakkında önemli bilgiler sunar. Ayrıca, bu süre ve katılımcının yaş, cinsiyet gibi faktörleri dikkate alınarak, maksimum oksijen tüketimi (VO_{2maks}) değerini hesaplamak mümkündür.

Araştırma Yayın Etiği

Çalışma başlamadan önce, Erzurum Teknik Üniversitesi Etik Kurulundan onay alınmıştır (Karar numarası: E-70400699-000-2200253717- Tarih: 26.08.2022). Katılımcıların kişisel bilgileri gizli tutulup anonim hale getirilmiştir. Tüm katılımcılara eşit ve adil bir muamele sağlanarak, katılımcılara saygılı bir şekilde davranılmıştır. Ayrıca, katılımcılara ve ebeveynlerine çalışmanın amacı, yöntemleri, olası fayda ve riskleri hakkında detaylı bilgilendirme yapılmış, çalışmaya katılımları tamamen gönüllülük esasına dayalı olduğu ve herhangi bir aşamada çalışmadan çekilebilecekleri konusunda bilgilendirilmiştir. Çalışma başlamadan önce, katılımcıların ve ebeveynlerinin yazılı onayı alınmıştır.

Verilerin Analizi

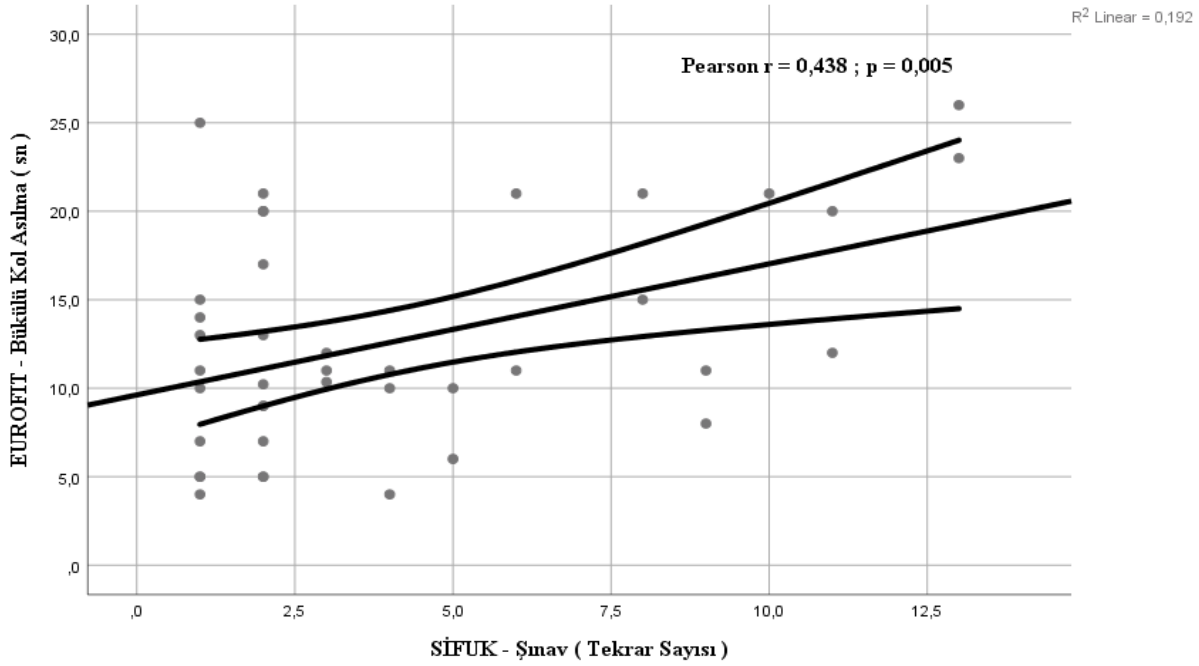
Verilerin analizi, SPSS 25.0 yazılımı kullanılarak gerçekleştirilmiştir. Elde edilen veri setinin genel özelliklerini belirlemek için ortalama ve standart sapma değerleri hesaplanmıştır. Pearson Korelasyon Analizi, farklı fiziksel uygunluk test bataryaları arasında ve bu bataryalarda ölçülen özellikler arasındaki ilişkilerin boyutu ve yönünü anlamak için kullanılmıştır. Ayrıca, bir test bataryasının içerdiği tüm değişkenler kümesi ile diğer bir test bataryasına ait değişkenler arasındaki ilişkiler, Python programlama dili kullanılarak kanonik korelasyon analizi ile incelenmiştir. Python'un numpy, pandas gibi temel veri işleme kütüphaneleri, veri hazırlanmasında kullanılmıştır. Kanonik korelasyon analizleri için ise scikit-learn veya statsmodels gibi Python kütüphanelerinden yararlanılmıştır. Bu kütüphaneler, çok değişkenli istatistiksel yöntemler sunmaktadır ve araştırmada kullanılan kanonik korelasyon analizlerinin gerçekleştirilmesi için etkili araçlar sağlamıştır. Bu analizler sırasında, bir test bataryasının içerdiği değişkenler kümesi ile diğer bir test bataryasına ait değişkenler arasındaki ilişkiler, bu kütüphanelerin sağladığı fonksiyonlar kullanılarak incelenmiştir.

BULGULAR

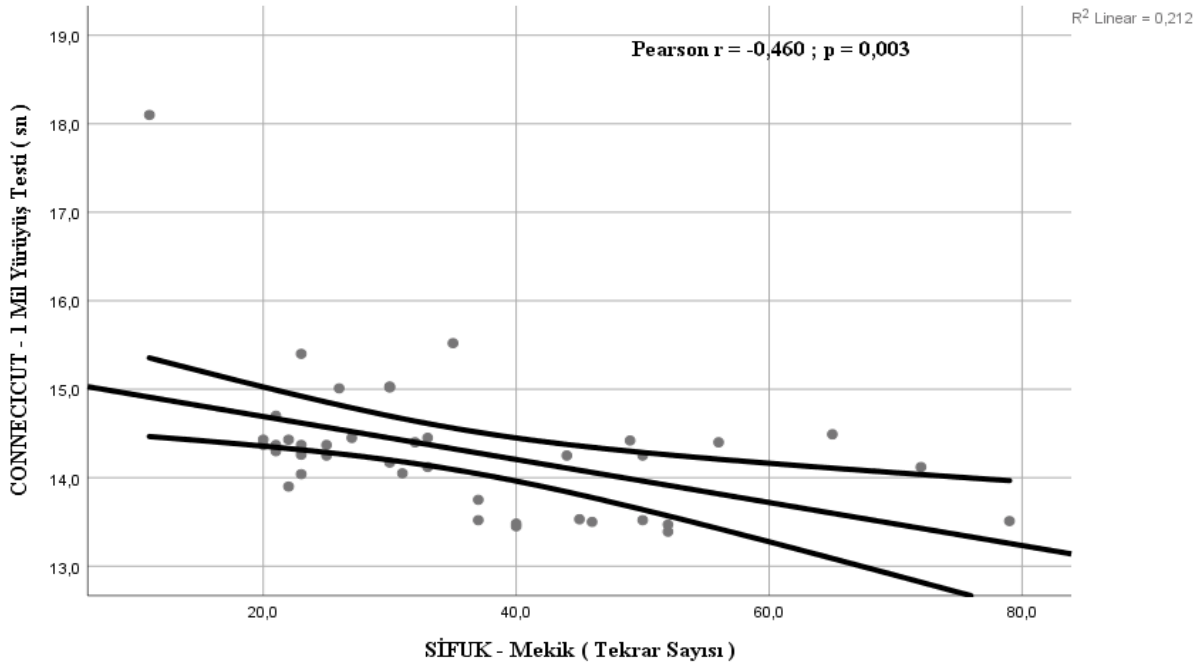
Katılımcıların tanımlayıcı özellikleri incelendiğinde erkeklerin ve kadınların yaşları sırasıyla $11,27 \pm 1,01$ – $11,04 \pm 1,17$ yıl, boy uzunlukları $145,30 \pm 10,07$ – $146,3 \pm 8,69$ cm vücut ağırlıkları $35,85 \pm 7,51$ – $36,08 \pm 8,70$ kg ve beden kitle indekslerinin $16,54 \pm 1,92$ – $16,86 \pm 2,53$ kg/m² değerlerine sahip olduğu belirlenmiştir. Araştırmanın bulguları, farklı fiziksel uygunluk test bataryaları arasındaki ilişkileri değerlendirmek üzerine odaklanmıştır. Özellikle, EUROFIT, ASSO Project, Connecticut ve SİFUK Test Bataryaları arasında yapılan karşılaştırmalarda elde edilen sonuçlar, bu testlerin birbiriyle olan ilişkilerini açıklamaktadır.

EUROFIT Test Bataryası içerisinde yer alan Bükülü Kol Asılma Testi ile SİFUK Test Bataryası içerisinde yer alan Şınav testi arasında ($r = 0,438$; $p = 0,005$; [Şekil 1]); Connecticut Test Bataryası'nın bir parçası olan 1-Mil Yürüyüş Testi ile SİFUK Test Bataryası'ndaki Mekik Testi arasında ($r = -0,460$; $p = 0,003$; [Şekil 2]); Connecticut Test Bataryası'nın bir parçası olan Modifiye

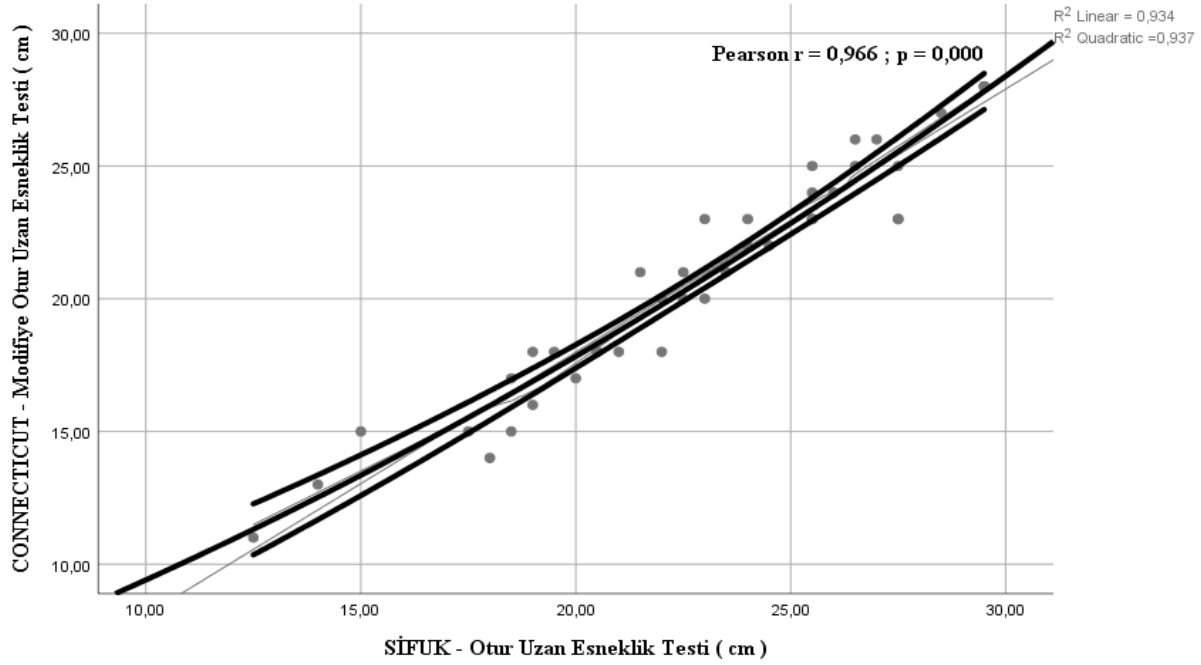
Otur-Uzan Esneklik Testi ile SİFUK Test Bataryası'nın Otur-Uzan Esneklik Testi arasında ($r = 0,966$; $p < 0,001$; [Şekil 3]) ve ASSO Project'in Mekik testi ile Connecticut'un 1-Mil Yürüyüş Testi arasında ($r = -0,460$; $p = 0,003$; [Şekil 4]) anlamlı ilişkiler olduğu bulunmuştur.



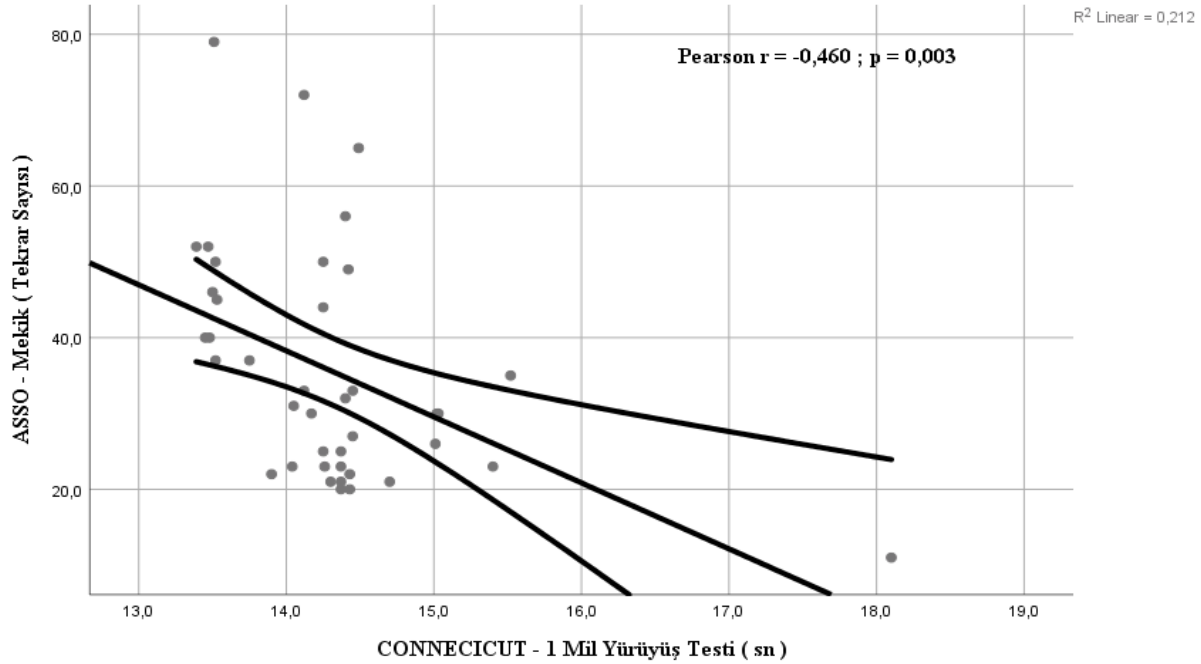
Şekil 1. EUROFIT – Bükülü Kol Asılma Testi ile SİFUK – Şınav Testi arasındaki ilişki



Şekil 2. Connecticut – 1-Mil Yürüyüş Testi ile SİFUK – Mekik Testi arasındaki ilişki



Şekil 3. Connecticut – Modifiye Otur Eriş Testi ile SİFUK – Otur-Uzan Testi arasındaki ilişki

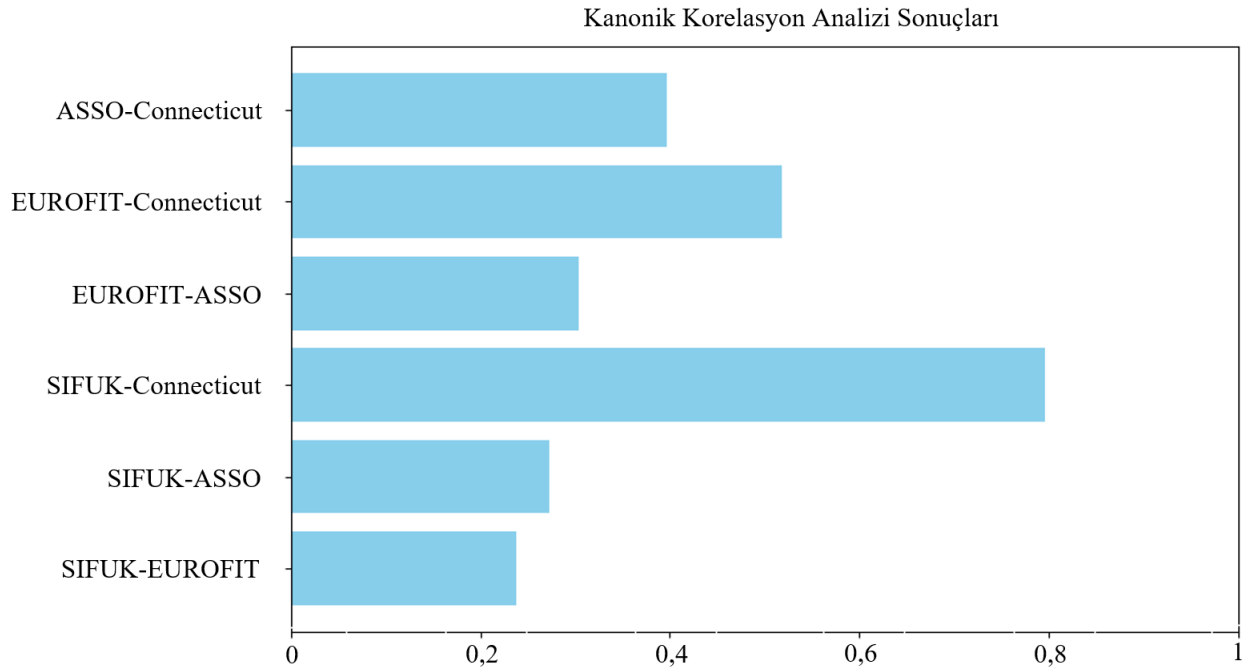


Şekil 4. ASSO Project – Mekik Testi ile Connecticut – 1-Mil Yürüyüş Testi arasındaki ilişki

Diğer taraftan, ASSO Project Test Bataryası içerisinde bulunan El Kavrama Kuvveti testi ile SİFUK Test Bataryası içindeki Şınav testi arasında ($r = 0,210$; $p = 0,194$); EUROFIT Test Bataryası'nın bir diğer parçası olan 30 Saniye Mekik Testi ile SİFUK Test Bataryası'nın Mekik testi arasında ($r = 0,277$; $p = 0,084$); 20 Metre Mekik Koşusu Testi (EUROFIT) ile Mekik Testi (SİFUK) arasında ($r = -0,291$; $p = 0,068$); EUROFIT Test Bataryası'nın 30 Saniye Mekik Testi ile

Connecticut Test Bataryası'nın 1-Mil Yürüyüş testi arasında ($r = -0,045$; $p = 0,782$); EUROFIT'in 10×5 Mekik Koşusu Testi ile ASSO Project'in 4×10 Testi arasında ($r = 0,277$; $p = 0,084$); EUROFIT'in 20 Metre Mekik Koşusu Testi ile Connecticut'un 1-Mil Yürüyüş Testi arasında ($r = 0,258$; $p = 0,107$); ASSO Project'in 20 Metre Mekik Koşusu Testi ile Connecticut'un 1-Mil Yürüyüş Testi arasında ($r = 0,239$; $p = 0,137$); Connecticut'un Şınav Testi ile ASSO Project'in El Kavrama Kuvveti Testi arasında ($r = 0,210$; $p = 0,194$); EUROFIT'in Bükülü Kol Asılma Testi ile ASSO Project'in El Kavrama Kuvveti Testi arasında ($r = 0,173$; $p = 0,286$) ve ASSO Project'in 20 Metre Mekik Koşusu Testi ile EUROFIT'in 30 Saniye Mekik Testi arasında ($r = 0,150$; $p = 0,355$) ise anlamlı ilişkiler bulunmamıştır.

Yapılan kanonik korelasyon analiz sonuçlarına göre ise SİFUK ve EUROFIT Test Bataryası arasındaki ilişki skoru 0,238 olarak bulunmuş ve iki test arasında zayıf bir ilişki olduğu tespit edilmiştir. Benzer şekilde SİFUK ve ASSO Project Test Bataryası arasındaki skor 0,273 olarak bulunmuş ve yine zayıf bir ilişki olduğu belirlenmiştir. Ancak, SİFUK ve Connecticut Test Bataryası arasında oldukça yüksek bir kanonik ilişki (0,796) olduğu tespit edilmiştir. Bu sonuç, SİFUK'un Connecticut Test Bataryası ile önemli derecede ilişkili olduğunu göstermektedir. EUROFIT Test Bataryası ve ASSO Project Test Bataryası arasındaki ilişki düzeyi 0,304; EUROFIT Test Bataryası ve Connecticut Test Bataryası arasındaki ilişki düzeyi ise 0,518 olarak hesaplanmıştır. ASSO Project Test Bataryası ve Connecticut Test Bataryası arasındaki ilişki düzeyinin ise 0,397 olduğu tespit edilmiştir (Grafik 1).



Grafik 1. SİFUK, EUROFIT, ASSO Project ve Connecticut test bataryaları arasındaki Kanonik ilişkiler

TARTIŞMA

Bu çalışmada, ülkemizde kullanılan SİFUK ve dünya çapında yaygın olarak kullanılan EUROFIT, ASSO Project ve Connecticut Fiziksel Uygunluk Test Bataryaları arasındaki ilişkiler incelenmiştir. Bilindiği gibi SİFUK kapsamında şınav, mekik ve esneklik testleri yer almaktadır. SİFUK'un Şınav Testi ile EUROFIT Test Bataryasının bir parçası olan Bükülü Kol Asılma Testi arasında bulunan anlamlı pozitif ilişki, üst vücut kuvveti hakkında her iki test tarafından benzer çıkarımlara ulaşılabildiğini ortaya koymaktadır. Bu iki testin çok uzun süredir kuvvet ölçümünde kullanılıyor olması ve oldukça eski tarihli çalışmaların da bu testler arasında anlamlı pozitif ilişkiler rapor etmesi bu çalışmanın bulgularını destekler niteliktedir (Clemons vd., 2004; Cotten ve Marwitz, 1969). Bu sonuçlar, her iki testin de üst vücut kuvvetinin farklı yönlerini ölçmesine rağmen, bu ölçümlerin genel üst vücut kuvvetiyle ilgili olabileceğini işaret etmektedir. Diğer yandan, SİFUK'un Şınav Testi ile ASSO Project'in El Kavrama Kuvveti Testi arasında bulunan anlamlı olmayan düşük derecede pozitif ilişki, Nalbant'ın (2018) çalışmasının sonuçları ile uyumlu olup, farklı kuvvet becerisini ölçtüklerinden dolayı bu iki test arasında güçlü bir ilişki bulunmayabileceğini göstermektedir (Nalbant, 2018). Bu durum, ön kol kuvvetini ölçen El Kavrama Kuvveti Testi ile üst ekstremité itici kuvvetini ölçen Şınav Testi arasında hitap ettiği kuvvet özelliği ve hareket mekaniği bakımından bazı farklılıklar olabileceğini ortaya koymaktadır (Newman vd., 1984; Özbay ve Ulupınar, 2022).

SİFUK'un Mekik Testi ile 30 Saniye Mekik Testi arasında görülen pozitif ilişkilerin istatistiksel anlamlılık eşiğine çok yakın olması fakat bu eşiğe ulaşamamış olması, her iki testin de gövde dayanıklılığını ve kuvvetini ölçmesine rağmen farklı metodolojiler kullandığını göstermektedir. Yapılan çalışmalarda ortaya koyulduğu gibi abdominal kas grubunun performansının bu testlerle değerlendirilebilmesi yaygındır fakat bir testin süre; diğer testin tekrar sayısı üzerinden ölçülmesi sebebiyle tam bir uyum sağlanması her zaman mümkün olmayabilmektedir (Demir ve Çilli, 2018; Taşkın vd., 2015). Çünkü 30 saniye gibi bir süre sınırının olması dayanıklılıktan ziyade aynı kas grubunun hızını temsil etmektedir. Benzer şekilde SİFUK'un Mekik Testi ile 20 Metre Mekik Koşusu Testi arasında da anlamlılık eşiğine çok yakın bir ilişki tespit edilmiş ancak bu ilişki düzeyinin anlamlılık için yeterli düzeyde olmadığı görülmüştür. Bu testlerden birinin aerobik dayanıklılığı, diğerinin ise karın kaslarının kuvvette devamlılığı ölçmesi sebebiyle farklılaşabileceği düşünülmektedir. Bu sonuç, bu alanda ilgili çalışmalara paraleldir ve iki testin farklı fiziksel özelliklere odaklandığının altını çizmektedir (Chung vd., 2023; Kaster vd., 2020; Ruiz vd., 2009).

Diğer taraftan, SİFUK'un Mekik Testi ile 1-Mil Yürüyüş Testi arasında anlamlı negatif bir ilişki olduğu tespit edilmiştir. Yapılan çalışmalar 1-Mil Yürüyüş Testi'nin, özellikle de aerobik dayanıklılığı ölçmek için uygun olduğunu belirtmektedir (McSwegin vd., 1998). Diğer yandan, Mekik Testi gövde kuvveti ve karın kaslarının dayanıklılığını ölçmek için kullanılmaktadır (Pirjol vd., 2017; Ulupınar ve Özbay, 2021). Mekik testi ile 20 Metre Mekik Koşusu testi arasındaki ilişkinin aksine Mekik testi ile 1-Mil Yürüyüş Testi arasındaki ilişkiler anlamlılık eşiğine ulaşmıştır. Bu sonuçlar, 20 metre mekik koşusu gibi enerjinin anaerobik sistemler tarafından sağlandığı bir tempoya ulaşılmasının belirleyici faktör olduğunu düşündürmektedir. Koşmaya

bağlı testlerde daha düşük sürelerin daha yüksek bir performans çıktısına işaret ettiği göz önüne alındığında, Mekik Testi ile 1-Mil Yürüyüş Testi arasındaki negatif ilişkinin uygulamada karşılık bulan bir sonuç olduğu söylenebilir. Bir başka ifadeyle 1 -Mil Yürüyüş testini daha kısa sürede tamamlamak ile klasik Mekik Testinde daha yüksek sayılara ulaşmak anlamlı derecede ilişkilidir.

SİFUK'un klasik Otur-Uzan Esneklik Testi ile Modifiye Otur-Uzan Esneklik Testi arasında yüksek derecede pozitif bir ilişki tespit edilmiştir, bu da her iki testin de vücudun büyük ölçüde benzer esneklik özelliklerini ölçtüğünü göstermektedir. Konuyla ilgili yapılan çalışmalar bu iki testin vücut esnekliği ve eklem hareket açıklığı konusunda benzer sonuçları yansıttığını belirterek bulgularımızı desteklemektedir (Holt vd., 1999; López-Miñarro ve Rodríguez-García, 2010).

EUROFIT Test Bataryası'nın 10 × 5 metre Mekik Koşusu Testi ve ASSO Project'in 4 × 10 metre testi arasında orta derecede pozitif bir ilişki saptanmıştır. Konuyla ilgili yapılan çalışmalar bu testlerin sürat ve çevikliği ölçtüğünü göstermiş, ancak elde edilen orta düzeydeki korelasyon, bu iki testin tam olarak aynı beceri kalıbına sahip olmadığını düşündürmektedir. Özellikle 10 × 5 metre testinde çok daha fazla sayıda yön değiştirme becerisinin belirleyici olabileceği düşünülmektedir (Bianco vd., 2016; Ulupınar ve Özbay, 2020).

20 Metre Mekik Koşusu Testi ve 1-Mil Yürüyüş Testi arasındaki düşük derecede pozitif ilişki, her iki testin de farklı dayanıklılık türlerini ölçtüğünü göstermektedir. Çalışmanın hipotezleri kapsamında bu iki test arasında daha büyük bir ilişki olacağı beklenmiştir ancak bu iki test, temelde benzer enerji sistemlerini (aerobik) kullanıyor gibi görünse de aslında uygulama ve performans ölçütlerinde bazı farklılıklar içermektedir. Çünkü 20 Metre Mekik Koşusu, yoğunluk arttıkça kademeli olarak aerobik sistemden anaerobik sisteme geçiş yapmaktadır (Olds vd., 2006; Ruiz vd., 2009). Ayrıca yüksek tempo ve sürekli dönüşlerin gerektirdiği eksantrik kasılmalar ve deselarasyon süreçleri anaerobik kapasiteyi zorlayabilir. Buna karşılık, 1-Mil Yürüyüş Testi daha fazla aerobik dayanıklılığı ölçer ve test boyunca genellikle sabit bir aerobik tempo sürdürülür (McSwegin vd., 1998). Yapılan çalışmalar, 20 Metre Mekik Koşusu Testi ve 1-Mil Yürüyüş testlerinin sırasıyla genel dayanıklılık (hem aerobik hem anaerobik) ve aerobik dayanıklılığı ölçtüğüne dikkat çekerek beklenenden daha düşük ilişkiyi açıklamak için bilimsel bulgular ortaya koymuşlardır.

Bu araştırmada ayrıca SİFUK ile EUROFIT, ASSO Project ve Connecticut Test Bataryalarının kanonik korelasyon analizleri yapılarak, farklı fiziksel uygunluk testlerinin birbiriyle ilişkileri değerlendirilmiştir. Yapılan analizlerde SİFUK ve EUROFIT arasında; SİFUK ve ASSO Project arasında 0,3'ten daha düşük düzeyde pozitif ilişkiler tespit edilirken; SİFUK ve Connecticut arasında yüksek düzeyde pozitif ilişkiler tespit edilmiştir. Bu sonuçlar SİFUK'un içerdiği fiziksel uygunluk bileşenleri bakımından EUROFIT ve ASSO Project bataryalarından oldukça farklı olduğu ancak Connecticut test bataryası ile büyük ölçüde benzer olduğunu göstermektedir. İçerdikleri fiziksel uygunluk testleri açısından şınav, mekik ve esneklik gibi ölçümlerin her iki test bataryasında da ortak olması ancak ilaveten 1-Mil Yürüyüş Testi barındırdığı için Connecticut'un SİFUK'tan farklılaştığı görülmektedir. Bir başka ifadeyle SİFUK, bir dayanıklılık koşusu

içermediği için kapsam bakımından Connecticut'tan eksik kalmaktadır. Aynı zamanda Connecticut'un az sayıdaki test ile diğer test bataryalarıyla en yüksek ilişki ortalamasına sahip olduğu düşünüldüğünde, en makul test paketini içerdiği söylenebilir. Böylece SİFUK'a sadece bir dayanıklılık koşusunun eklenmesinin fiziksel uygunluk hakkında en az sayıda test ile mümkün olduğunca fazla bilgi veren makul bir test paketine dönüştürülebileceği görülmektedir.

SONUÇ

Bu çalışmada Türkiye'de kullanılan SİFUK ve global test bataryaları olan EUROFIT, ASSO Project ve Connecticut test bataryalarıyla karşılaştırılmıştır. Test bataryalarının ortalama Kanonik Korelasyonları üzerinden yapılan analizler, bu testler arasındaki ilişkileri anlamak ve ölçtükleri fiziksel yetenek bileşenlerini belirlemek için kullanılmıştır. Çalışmanın bulguları SİFUK ve Connecticut arasında yüksek bir ilişki (0,796) olduğunu gösterirken; SİFUK – EUROFIT arasında (0,238) ve SİFUK – ASSO Project (0,273) arasında düşük düzeyde ilişkiler olduğunu göstermektedir. Ayrıca Connecticut test bataryasının aynı zamanda diğer iki global test bataryası (EUROFIT ve ASSO Project) ile daha yüksek ilişki düzeyine sahip olması kritik bir bulgu olarak dikkat çekmektedir. Çünkü Connecticut, SİFUK ile birlikte en az test içeren test bataryasıdır. SİFUK'un Connecticut'tan farkı ise koşmaya dayalı bir dayanıklılık testinin olmamasıdır. Dolayısıyla ülkemizde uygulanan SİFUK test bataryasına bir dayanıklılık koşusunun dahil edilmesi durumunda global test bataryalarına kapsam açısından oldukça benzerlik sağlayabileceği düşünülmektedir.

Sınırlılıklar

Bu çalışma, birkaç önemli sınırlılık içermektedir. İlk olarak, araştırma grubunun coğrafi olarak sadece tek bir il ile sınırlı olması, elde edilen sonuçların genel geçerliliği üzerinde belli kısıtlamalar yaratmaktadır. Bu durum, bulguların farklı bölgelerdeki popülasyonlara uygulanabilirliğini sınırlayabilir. İkinci olarak, çalışmaya dahil edilen katılımcıların yaş aralığının 10-14 yaş ile sınırlı olması, elde edilen sonuçların bu yaş grubu dışındaki bireyler için geçerliliğini sorgulanabilir kılmaktadır. Bu yaş grubu, büyüme ve gelişme döneminde olduğundan, bulguların genç yetişkinler veya yaşlılar gibi diğer yaş gruplarına ekstrapolasyonu konusunda dikkatli olunmalıdır. Üçüncü olarak, çalışmanın sadece SİFUK, EUROFIT, ASSO Project ve Connecticut test bataryaları ile sınırlı olması, diğer potansiyel fiziksel uygunluk değerlendirme araçlarını dışlamaktadır. Bu durum, çalışmanın kapsamını ve bu testlerin kapsamadığı ölçüm alanlarını değerlendirme yeteneğini sınırlar. Son olarak, ölçümlerin yalnızca çalışmanın araştırmacıları tarafından yapılması, ölçüm sonuçları üzerindeki subjektivite riskini artırabilir. Bu durum, farklı araştırmacılar tarafından benzer ölçümlerin yapılması durumunda sonuçların tutarlılığını garantilemek için standart protokollerin ve eğitimlerin önemini vurgular. Bu sınırlılıklar, çalışmanın sonuçlarının yorumlanması ve genelleştirilmesi sırasında göz önünde bulundurulmalıdır.

Kara, R., Ulupınar, S., Sevindik-Aktaş, B. (2024). Sağlıkla ilgili fiziksel uygunluk karnesinin EUROFIT, ASSO Project ve Connecticut test bataryalarıyla karşılaştırmalı analizi. *Avrasya Spor Bilimleri ve Eğitim Dergisi*, 6(2), 112-127.

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Kurul Adı: Erzurum Teknik Üniversitesi Bilimsel Araştırma ve Yayın Etik Kurulu

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The Importance of Physical Activity in Terms of Mental Health: Investigating the Role of Regular Physical Activity in the Relationships Between Happiness, Mental Well-Being, Stress, Anxiety, and Depression

Aylin ZEKİOĞLU^{1*}, Arkun TATAR^{2*}, Didem AYHAN^{3*}

¹Manisa Celal Bayar University, Faculty of Sports Sciences, Manisa, Türkiye.

²Manisa Celal Bayar University, Faculty Department of Psychology, Manisa, Türkiye.

³Bandırma Onyedi Eylül University, Faculty of Health Sciences, Balıkesir, Türkiye.

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Abstract

Relevant studies indicate that sports increase happiness and helps protect mental health. However, the importance of physical activity in terms of its effects on happiness and mental health needs to be demonstrated. In this study, the purpose was to reveal the effect of doing regular physical activity in investigating the relations between happiness, mental well-being, stress, anxiety, and depression. Data were collected with the Perceived Stress Scale, Warwick-Edinburgh Mental Well-being Scale, the short form of Oxford Happiness Scale, and Hospital Anxiety and Depression Scale. A total of 1715 people, 854 males, and 861 females, between the ages of 18-78 participated in the present study. When the results were examined in terms of the condition of physical activity, it was determined that the participants who do physical activity regularly had higher happiness and mental well-being scores than those who not doing regular physical activity, and their stress and depression levels were lower. No differences were detected between the anxiety levels in terms of doing regular physical activity conditions. Different squared multiple correlation coefficients were calculated in predicting happiness, in different models having been compared, and in groups that were formed regarding the physical activity participation condition. It was observed that negative emotional structures explained happiness better without mental well-being in the non-sporting group. The opposite result was obtained when mental well-being mediated the relation between negative emotional structures and happiness.

Keywords: Physical activity, Happiness, Mental well-being, Stress, Anxiety, Depression

* Corresponding Author: Aylin Zekioglu, E-mail: aylinzekioglu@yahoo.com

INTRODUCTION

It was reported in previous studies that the sedentary lifestyle, which is considered to be the main cause of many health problems, is increasing in all countries causing 6% of the global deaths (World Health Organization, 2010). On the other hand, it is also stated that contributes to physical, social, psychological, and mental wellbeing and leads a healthy life. In this respect, many studies were conducted to show the relation between exercise and mental health (Mandolesi et al., 2018; Stevens et al., 2019). It was stated that individuals who exercise increase their social functionality and emotional flexibility, their moods change positively, they adapt more easily to stressful situations, and have more positive body images (Baruth et al., 2011; Chan et al., 2019; Mandolesi et al., 2018; Stevens et al., 2019; Wicker et al., 2017). It was shown in previously conducted studies that doing regular physical activity increases emotional balance, psychological well-being, self-efficacy, and self-esteem in addition to gaining the ability to manage stress (Baruth et al., 2011; Bhochhibhoya et al., 2014; Hogan et al., 2013; Stevens et al., 2019). It was also reported that it reduces anxiety, age-related cognitive decrease, the severity and frequency of depression (Chan et al., 2019; Fox, 1999; Mikkelsen et al., 2017; Stevens et al., 2019). It was seen that the stress, depression, and anger levels in individuals who regular exercise were lower compared to those who not exercise and who occasional exercise (Lindwall et al., 2011; Stanescu et al., 2014).

A great number of clinical, experimental, and epidemiological studies showed that doing regular physical activity has psychological benefits. When sportive activities and mood levels were examined, it was determined that the participants were better on the days when they exercised than the days, they did not any sports. In addition, it was also understood that people who did regular exercises had lower levels of anxiety, depression, stress symptoms, and had a better quality of life compared to those who did fewer exercise (de Asis et al., 2008; Mandolesi et al., 2018; Pugh et al., 2011).

In addition, the positive results of doing regular physical activity are valid for individuals from all age groups except for the elderly individuals (Ayotte et al., 2013; Hogan et al., 2013). Especially in children and adolescents, doing regular physical activity contributes positively to establishing empathy, to the development of mental health, having positive emotions about physical self, to the development of self-identity and self-confidence, and to establishing social relations and psychological well-being (Bhochhibhoya et al., 2014). In addition, doing regular physical activity is inversely related to anger, mental distraction, and tension (Duncan et al., 2005; Hogan et al., 2013; Marker et al., 2018; Zekioglu et al., 2018). However, it was reported that there were contradictory findings of doing regular physical activity in the form of an increase in the positive emotions of the elderly individuals after doing regular physical activity, and in some studies, the opposite results were reported (Hogan et al., 2013). However, it is widely accepted that doing regular physical activity is an important factor for having a healthy old age (Liffiton et al., 2012; Yen et al., 2018). Because doing regular physical activity leads to psychological well-being, increasing quality of life, and positive emotional experiences in old age. In addition, it supports

mental health and helps to prevent cognitive decline even if the biological mechanisms of these are not explained fully yet (Engeroff et al., 2018; Hogan et al., 2013; Klusmann et al., 2012; Mandolesi et al., 2018).

Regular physical activity is also important and related to increasing happiness in addition to psychological factors in all age groups (Jones et al., 2005; Khazae-Pool et al., 2015). However, it is understood that this relation is confused with the results of research arguing that there is no relation between exercise and happiness or that happy people do sport. In addition, it was seen that the contribution of doing regular physical activity to happiness is lower than the contribution of some socio-demographic factors to happiness (Lathia et al., 2017; Richards et al., 2015). In addition to these, doing regular physical activity indirectly affects happiness, and increases the quality of life, decreasing early mortality rates, depression, and anxiety, and helps to solve the problems related to psychological health problems like depression and anxiety (Fox, 1999; Huang et al., 2012).

Depending on the type of physical activity, doing regular physical activity also provides a positive contribution to the well-being of individuals (Dechamps et al., 2007; Mack et al., 2017). Psychological Mechanistic Hypothesis argues that doing regular physical activity helps individuals to be relieved from stressful events of daily life and increases well-being (Biddle and Ekkekakis, 2005). In other words, it was reported that doing regular physical activity affects the neurotransmitters and neuromodulators and increases well-being (de Varis et al., 2018). It was shown that doing regular physical activity increased well-being and decreased depressive symptoms in the group that was diagnosed with major depressive disorder (Landi et al., 2010; Sanchez-Viiegas et al., 2008). In addition, healthy individuals reported that they did more sports because of the increase in their well-being levels stemming from doing regular physical activity (Diener and Seligman, 2004; Reed and Buck, 2009).

It is seen that the number of studies reporting that doing regular physical activity increased happiness and helped to maintain mental health increased at a significant level. However, the problem at this point is showing the effect of doing regular physical activity among the components of happiness and in the protection of mental health. In this study, the purpose was to examine the effect of doing regular physical activity on happiness, mental well-being and stress, anxiety, and negative emotional dynamics such as depression mainly in terms of the current situation in Turkey. In this respect, no specific results are expected in revealing the relation between exercise and cases. However, understanding that the current situation in Turkey is quite low especially compared with the rates of doing regular physical activity in western countries and considering the cases in a sampling constitute the desired basis points planned and analyzed in this study. Does regular physical activity have any effect on the relationship between happiness, mental well-being, stress, anxiety and depression? An answer was sought to the question. In addition, it was also planned to test the mediating role of mental well-being in this relational structure.

METHOD

Design and Participants

This was a descriptive and cross-sectional study designed to investigate the role of doing regular physical activity in relations between happiness, mental well-being, stress, anxiety, and depression. The population of the study was reached using the convenience sampling method consisted of people living in Turkey. A total of 1715 people, 861 females (50.2%) and 854 males (49.8%) between the ages of 18-78 (average age=28.03±10.61 years) participated in the present study. It was determined that 257 of the participants regular physical exercised (15.0%), 694 exercised occasionally (40.5%), and 794 (44.5%) did not do any physical activity. The exclusion criterion of the study was taken as working in professional athletes or athletic environments, and people who had these characteristics were not given the form.

Data Collection and Tools

Informed Volunteering Consent Forms were received from the participants, and the form which consisted of the scales was given to them who voluntarily agreed to participate in the present study. The study was conducted with individuals who could be contacted with the Convenient Sampling Method in two months between June and July 2021 in Istanbul. The application was made only with the printed forms, and the application of one person was completed in about 10-15 minutes.

In this study, the Perceived Stress Scale, Warwick-Edinburgh Mental Well-being Scale, the concise form of Oxford Happiness Scale, and Hospital Anxiety and Depression Scale were applied. Physical activity measurement was determined by the three-grade (non-doing physical activity, rarely physical activity and regular physical activity) Osgood Semantic Differential Scales.

Oxford Happiness Scale: Hills and Argyle (2002) developed this scale, and Dogan and Cötok (2011) adapted it into Turkish. In this study, the concise form that consisted of 7 items was administered as a 5-point Likert-type scale (1=disagree, 5=fully agree). Items 1 and 7 of this scale were scored in opposite directions (Dogan and Cötok, 2011). Cronbach's alpha internal consistency and test-retest methods were used to reveal the reliability of OLS-K. The Cronbach's alpha internal consistency coefficient calculated over the data obtained from 321 participants was found to be .74. In the test-retest reliability study, the OLS-R was administered to 81 university students two weeks apart and a correlation of .85 was obtained between the two applications. These results show that the reliability of the scale is at an acceptable level.

Warwick-Edinburgh Mental Well-Being Scale: Tennant et al., (2007) developed this scale and Keldal (2015) translated it into Turkish. Scale, which did not have inverse items, consisted of 14 items with 5-point Likert-type scale (1=disagree, 5=fully agree) (Keldal, 2015). The internal

consistency reliability of the scale was calculated using data obtained from 348 participants and the Cronbach's alpha coefficient was found to be .89.

Perceived Stress Scale: Cohen et al., (1983) developed this scale and Eskin et al., (2013) translated it into Turkish. Scale consisted of 14 items with 5-point Likert-type answers (0=never, 4=very frequently), and 7 items were reversed. A high score indicated high stress perception level (Eskin et al., 2013). The reliability coefficient found for ASÖ-4 may seem low but considering that Cronbach's alpha values tend to decrease statistically when the number of items is low, 0.66 can be considered sufficient.

Hospital Anxiety and Depression Scale: Zigmond and Snaith (1983) developed this scale and Aydemir et al., (1997) translated it into Turkish. Scale consisted of single-numbered items showing the Anxiety scores, and even-numbered items showed Depression Dimension, and consisted of fourteen 4-point Likert-type items and 8 items of the scale were scored reversely (Aydemir et al., 1997). Testing the reliability of HAD scale, Cronbach alfa coefficient for anxiety subscale it was 0.7784. Item total score correlation coefficients were ranging between 0.8161 and 0.8547 in anxiety subscale and 0.7374 and 0.7795 in depression subscale.

It was calculated that the Oxford Happiness Scale that was employed in the study had an internal consistency reliability coefficient of 0.76, the Warwick-Edinburgh Mental Well-being Scale had 0.91, the Perceived Stress Scale had 0.76, the Hospital Anxiety Depression Scale Anxiety Dimension had 0.78, and the Depression Dimension had 0.73. The correlation coefficients between the total scores of the scales were between 0.45 (between Perceived Stress Scale and Hospital Anxiety Depression Scale Depression Dimension) and 0.75 (between Oxford Happiness Scale and Warwick-Edinburgh Mental Well-being Scale)

Ethical Approval

This study was conducted in accordance with the ethical principles of the Declaration of Helsinki. Verbal and written consent of the participants was obtained. In addition, it was seen that the study was ethically appropriate with the decision of the Social and Human Sciences Ethics Committee of Bandirma Onyedi Eylul University, dated June 3, 2021, and numbered 5, with the decision numbered 2021/5.

Analysis of the Data

The data were examined using the internal consistency reliability coefficient of the scales, Pearson correlation between the scale total scores, and group comparisons with MANOVA. The Squared Multiple Correlation was calculated to compare the prediction rates of happiness in different models test, and the Path Analysis Coincident Indicators were calculated to show the relations between the variables and to test different models.

RESULTS

Table 1. Internal consistency reliability coefficient for the scales, correlation analysis between total scores and MANOVA results between groups

n=1715	Alpha	1	2	3	4	F	Partial η^2
1-Oxford Happiness Scale	0.76					4.13*	0.006
2-Warwick-Edinburgh Mental Well-being Scale	0.91	0.75***				4.88**	0.007
3-Perceived Stress Scale	0.76	-0.51***	-0.52***			6.55***	0.009
4-Hospital Anxiety Depression Scale - Anxiety dimension	0.78	-0.54***	-0.54***	0.54***		1.45	0.002
5-Hospital Anxiety Depression Scale-Depression dimension	0.73	-0.58***	-0.60***	0.45***	0.58***	4.13*	0.006

*p<0.05; **p<0.01; ***p<0.001

In the present study, the total scores of the scale were compared with MANOVA for doing regular physical activity condition groups. According to the results, the main effect was statistically significant in the comparison of doing regular physical activity condition groups in terms of total scores of the scales (Wilk's $\lambda=0.98$, $F_{(10, 2886)}=2.84$, $p<0.01$, partial $\eta^2=0.010$). When the scale scores were considered one-by-one, the main effect levels were as follows; for Oxford Happiness Scale ($F_{(267, 1447)}=1.86$, $p<0.001$, partial $\eta^2=0.256$), for Warwick-Edinburgh Mental Well-being Scale ($F_{(267, 1447)}=1.73$, $p<0.001$, partial $\eta^2=0.241$), for Perceived Stress Scale ($F_{(267, 1447)}=1.96$, $p<0.001$, partial $\eta^2=0.266$), for Hospital Anxiety Depression Scale Anxiety Dimension ($F_{(267, 1447)}=1.49$, $p<0.001$, partial $\eta^2=0.216$) and for Depression Dimension ($F_{(267, 1447)}=1.68$, $p<0.001$, partial $\eta^2=0.236$). When the scale total scores were examined in terms of doing regular physical activity condition, there were significant differences as follows; for Oxford Happiness Scale ($F_{(2, 1447)}=4.13$, $p<0.05$, partial $\eta^2=0.006$), for Warwick-Edinburgh Mental Well-being Scale ($F_{(2, 1447)}=4.88$, $p<0.01$, partial $\eta^2=0.007$), for Perceived Stress Scale ($F_{(2, 1447)}=6.55$, $p<0.001$, partial $\eta^2=0.009$) and for Hospital Anxiety Depression Scale Depression Dimension ($F_{(2, 1447)}=4.13$, $p<0.01$, partial $\eta^2=0.006$).

According to the Tukey multiple comparisons test that was done to examine the differences between the groups, the total score of happiness and mental well-being of the group that did not any physical activity was lower than the other two groups. In terms of stress and depression scores, there was a difference between the three groups; and the scores of the group who did not any physical activity were high, and the scores of the group that did regular physical activity were low (Figure 1).

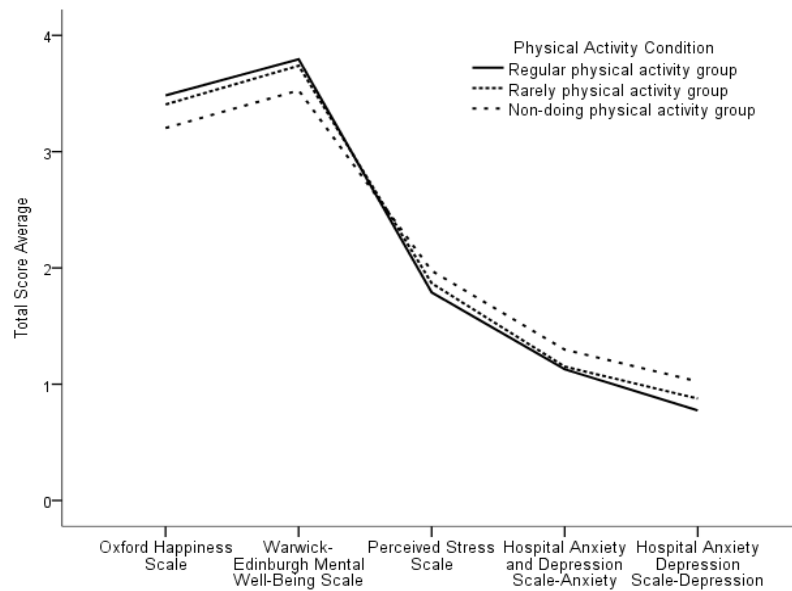


Figure 1. The distribution of the doing physical activity groups in terms of the scores of the scales

In the study, the models, which were created with the Path Analysis to show the relations between happiness and negative emotions as the mediating role of mental well-being, both for the whole group and for each doing regular physical activity condition group, were presented as stress, anxiety and depression were tested. In the present study, three different models were created to show the relations between emotional dynamics that consisted of happiness and stress, anxiety and depression. In Model 1, mental well-being was not included, and the model that predicted happiness only with stress, anxiety, and depression was tested. In Model 2, mental well-being was included between the emotional dynamics of happiness and stress, anxiety, and depression. However, in this model, the interaction between happiness and mental well-being was taken unilaterally; and the structure was created in which negative emotional status affected happiness with mental well-being. In Model 3, on the other hand, mental well-being was included between happiness and negative emotional structures again; however, in addition to the structure in Model 2, the interaction between happiness and mental well-being was established in a form which showed that happiness affected mental well-being (Figure 2).

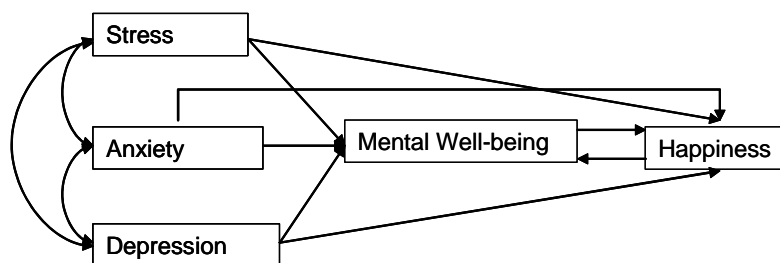


Figure 2. The hypothetical structure in which Model 3, which is supposed to be the common interaction between happiness and mental well-being, is tested

The three models were tested separately with the Path Analysis for the whole group and for each of the groups that made up the doing regular physical activity condition; and it was determined that the Coincidence Indicators showed high goodness of fit levels. For example, the goodness of fit indicators for Model 3 are given in Table 2.

Table 2. The compliance indicators in the results of path analysis of the structure that was tested with Model 3 for physical activity levels groups

Groups	χ^2	Sd	χ^2/Sd	RMR	GFI	AGFI	NFI	CFI	RMSEA
Whole Group	0.778	2	0.389	0.054	1.000	0.999	1.000	1.000	0.000
Regular physical activity group	4.633	2	2.316	0.322	0.993	0.947	0.992	0.995	0.072
Rarely physical activity group	0.863	2	0.432	0.117	1.000	0.996	0.999	1.000	0.000
Non-doing physical activity group	0.531	2	0.265	0.094	1.000	0.998	1.000	1.000	0.000

Table 3. The squares of the multiple correlations as the predictors of happiness that were calculated with the path analysis in the structures created with three different models for the whole group and the physical activity condition groups

Groups	r	Model 1 - R ²	Model 2 - R ²	Model 3 - R ²
Whole Group	1715	0.440	0.603	0.472
Regular physical activity Group	257	0.428	0.608	0.466
Rarely physical activity Group	694	0.430	0.604	0.474
Non- physical activity Group	764	0.432	0.582	0.448

As a summary of the models that were tested, the square of the multiple correlations was calculated as the predictive rates of happiness. The predictive rates of happiness were determined at higher levels with Model 2 in the whole group and in each of the groups that made up the doing physical activity condition. In the comparison of the groups that made up the doing regular physical activity condition, it was seen that negative emotional structures were more effective in the group that did not any physical activity ($R^2=0.432$) when mental well-being was not taken into consideration (Model 1). It was calculated that the rate of explaining happiness decreased as the amount of doing regular physical activity increased, and the effect of negative emotional structures was relatively less in the group that did regular physical activity ($R^2=0.428$). When the mental well-being was taken as the mediating variable between happiness and negative emotional structures (Model 2 and 3), the situation was reversed; and the rates of explaining happiness ($R^2=0.608$ for Model 2 and $R^2=0.466$ for Model 2) were higher in the regular physical activity group than the explaining happiness rates in the group that did not any physical activity ($R^2=0.582$ for Model 2 and $R^2=0.448$ for Model 3) (Table 3).

DISCUSSION

In this study, the purpose was to examine the role of doing regular physical activity in the relations that consisted of happiness and stress, anxiety and depression in Turkey. In this research, the secondary objective was planned to evaluate the mediating role of psychological well-being in the relational structure. The relations between the variables that were handled in this study, were presented in many studies (Fox, 1999; Mandolosi et al., 2018). For this reason, the prior point in this study was to consider these cases together in a sampling group; and to test the relations between structures on a sampling group.

The effects of regular physical activity on happiness, stress, anxiety and depression are generally supported by research. Today, the positive effects of regular exercise on mental health are emphasised. It is stated that physical activity supports feelings of happiness by increasing the secretion of happiness hormones such as serotonin and endorphins and helps to cope with stress. There is also widespread agreement that it reduces symptoms of anxiety and depression and improves overall mental health. In this context, research on the positive effects of physical activity on mental health provides important findings that regular exercise can improve the quality of life of individuals and support their psychological well-being (Arslan et al., 2011; Tekin et al., 2009). In this study, the happiness and psychological well-being levels of the group who performed regular physical activity were found to be higher than the group who did not perform any physical activity. It has been shown that it reduces tension, takes part in treatment processes as a healing factor in depression and thus contributes to the person's feeling of well-being and happiness. There are many studies (Huang and Humphreys 2012; Ugurlu et al., 2015). In addition, the effect of regular exercise on cognitive functions (Van Dijk et al., 2013), depression (Mammen and Faulkner, 2013) and quality of life (Bullo et al., 2015) was also revealed. Our study demonstrated the role of regular exercise in predicting psychological well-being and negative emotional dynamics in happiness.

Many studies show the importance of physical activity for psychological health (Chan et al., 2019; de Assis et al., 2008; Mandolosi et al., 2018; Mikkelsen et al., 2017; Stevens et al., 2019) and increases happiness and/or contributes to happiness (Fox, 1999; Huang and Humphreys, 2012; Khazaei-Pool et al., 2015). However, happiness has many components because of its nature, and the interaction and overlapping between the variables become inevitable as the number of variables increases. For this reason, it is the critical point to show the happiness with a variable that is also among the components of happiness and the effect of doing regular physical activity in this study. Furthermore, physical activity participation rates and happiness show differences among cultures, which makes it even more important to determine the current situation in Turkey in this respect. When considered in this context, it is of separated importance to determine the theoretical structure between happiness and relevant components and to deal with the factual structures in different cultures.

In terms of the factual structures considered in the present study, there were differences between the groups that made up the doing regular physical activity condition except for the anxiety dimension (Pot and Keizer, 2016; Sanchez-Villegas et al., 2008). The happiness and psychological well-being levels were higher in the group that did regular physical activity compared to the group who did not any physical activity. In the same context, the stress and depression levels of the group that did physical activity were lower than those who did not physical activity. The Rarely Sporting Group was in the middle. There was no difference between the only doing regular physical activity condition groups in terms of anxiety levels.

Three models were created depending on the way psychological well-being was included in the relations between the subjects that were dealt with in the study. The results obtained in this way with the Path Analysis ensured that the mediating role of negative emotional dynamics that consisted of stress, anxiety and depression, and psychological well-being was tested in the groups that made up the doing regular physical activity condition groups with the established theoretical models. The high goodness of fit indicators according to the results of the Path Analysis showed the fitness of the established theoretical models. The differences among the fitness levels between different models showed the role of psychological well-being and negative emotional dynamics in predicting happiness. The squares of multiple correlations that were obtained in predicting happiness with different models showed that psychological well-being had a different role in the groups that made up different doing regular physical activity conditions.

CONCLUSIONS

It was seen that doing regular physical activity was effective on happiness, mental well-being, stress, anxiety and depression. It was also seen that happiness was affected by the number of sports, and especially, by the mental well-being as was tested in this study. However, many other psychological factors affect happiness and that were not included in this study. Examining some of these structures by including them in the models that were included in this study seems to be contributing more to understanding the role of doing regular physical activity and explaining happiness.

Limitations of Study

Doing regular physical activity involves simple physical activities like running and dangerous physical activity branches like parachuting. For this reason, “doing regular physical activity or participating in sports” is considered in a wide range. Particularly, the evaluation of how physical activity were performed was not included in the scope of the study and was not included in the model constitute an important limitation of this study. Another limitation of the study and the general problem for such studies was the difficulty in taking physical activity as a qualitative variable and evaluating it in quantitatively. A measurement in the form of measuring how many hours of sporting a day is done or a week does not allow a comparison because of the differences in physical activity. However, evaluating doing regular physical activity as a quantitative variable may allow the establishment of different models in path analysis.

Data Availability

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

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Ethical approval

Ethics Committee: Bandırma Onyedi Eylül University Social and Human Sciences Ethics Committee

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Evaluation of Stakeholder Opinions on Physical Education and Game Lesson Practices*

Cemre Nilay AKKOYUN^{†1} , Dilek YALIZ SOLMAZ² 

¹Kütahya Dumlupınar University, Kütahya, Türkiye

²Eskişehir Technical University, Eskişehir, Türkiye

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Abstract

In this study, it is aimed to evaluate the opinions of classroom teachers, parents and school administrators regarding the physical education and game lesson curriculum and practices. The research was carried out with a study group of 13 people in the 2021-2022 academic year. In the study, the basic qualitative research method was adopted, which provided the opportunity to get to know the experiences of the study group in more depth, and the interview technique was used as a data collection tool. After the data were transcribed, descriptive analysis and content analysis were performed. According to the results of the research, in general, there are contradictions between the importance given to the physical education and game lesson in words and the value given in practice. The research is important in terms of recognising the problems in physical education and game lesson practices and taking necessary measures. In order to solve the problems encountered, it is recommended that in-service training should be made widespread, training programmes should be reviewed, and cooperation of stakeholders should be ensured.

Keywords: Classroom teacher, Physical education and game lesson, Stakeholders, School administrator, Parents

Beden Eğitimi ve Oyun Dersi Uygulamalarına İlişkin Paydaş Görüşlerinin Değerlendirilmesi

Öz

Bu çalışmada, beden eğitimi ve oyun dersi öğretim programı ve uygulamalarına ilişkin sınıf öğretmenleri, veliler ve okul yöneticilerinin görüşlerinin değerlendirilmesi amaçlanmaktadır. Araştırma 2021-2022 eğitim-öğretim yılında 13 kişilik bir çalışma grubu ile gerçekleştirilmiştir. Araştırmada çalışma grubunun deneyimlerini daha derinlemesine tanıma fırsatı sağlayan temel nitel araştırma yöntemi benimsenmiş ve veri toplama aracı olarak görüşme tekniği kullanılmıştır. Veriler yazıya döküldükten sonra betimsel analiz ve içerik analizi yapılmıştır. Araştırma sonuçlarına göre genel olarak beden eğitimi ve oyun dersine önem verildiği ifade edilmesine rağmen uygulamada verilen değer arasında çelişkiler bulunduğu görülmektedir. Araştırma, beden eğitimi ve oyun dersi uygulamalarındaki sorunların fark edilmesi ve gerekli önlemlerin alınması açısından önemlidir. Karşılaşılan sorunların çözümü için hizmet içi eğitimlerin yaygınlaştırılması, eğitim programlarının gözden geçirilmesi ve paydaşların iş birliğinin sağlanması önerilmektedir.

Anahtar Kelimeler: Sınıf öğretmeni, Beden eğitimi ve oyun dersi, Paydaş, Okul yöneticisi, Veli

* This study is derived from Cemre Nilay AKKOYUN's master's thesis.

[†]**Corresponding Author:** Cemre Nilay AKKOYUN, **E-mail:** cemre.akkoyun@dpu.edu.tr

INTRODUCTION

In today's modern understanding of education, educational institutions aim to develop individuals physically, cognitively, socially and emotionally as a whole, to reveal their talents and to ensure their high-level development. In this context, lessons related to physical education and sports, which are frequently used and aim at the multiple development of the individual, come to the fore. According to the Ministry of National Education [MoNE] (2018), physical education and sports lessons aim to prepare students for the next level of education by developing basic movements, active and healthy life skills, concepts and strategies, as well as related life skills and values that they will use throughout their lives through games and physical activities. Darst and Pangrazi (2009) state that physical education classes are considered as a complementary part of education programmes and Siedentop (2001) states that most researchers studying primary education consider physical education classes as compulsory in terms of achieving educational goals in primary education.

Saracho and Spodek (2002) observed improvements in the literacy and other skills of students in the classes of teachers who organised game environments and activity areas in their schools, which are important for children to make sports a habit, to love sports and to be a healthy individual, as well as their contributions to children's developmental areas. Therefore, teachers who conduct physical education classes at the primary education level are also responsible for preparing and implementing a curriculum that will provide students with the habit of physical activity due to its effects on children's development (Darst & Pangrazi, 2009). In some developed countries such as the United States of America, classroom teachers and physical education teachers share the responsibility of conducting physical education lessons at the primary level (Allison, 1990; Siedentop, 2001), but in many countries this responsibility is left entirely to classroom teachers (Arslan & Altay, 2009). In primary schools in Turkey, physical education classes are conducted by classroom teachers in grades 1-4 and by physical education teachers in grades 5-8, except for special education schools. Therefore, classroom teachers are the first ones to introduce physical education lessons to primary school students. Allison (1990) points out that due to this responsibility that classroom teachers have for conducting physical education lessons, researchers should focus on research on physical education lessons on classroom teachers and candidates.

In the studies conducted on classroom teachers' conducting physical education lessons, it was found that there were problems in terms of not having enough materials, space and equipment and experiencing deficiencies, lesson outcomes, resources and lesson activities (Can & Çava, 2008; Ceylan, 2015; Dağdalen & Kösterelioğlu 2015; Jenkinson & Benson, 2010; Kazu & Aslan, 2016; Morgan & Hansen, 2008; Pehlivan et al., 2005; Yıldız & Güven, 2014). It was found that classroom teachers also used the game and physical activities lesson hours to overcome the deficits of other lessons, that they did not receive the support of the administration in terms of materials,

space, etc. in the lesson, and that there were problems in the dimensions of formation and caring (Bozdemir et al., 2015; Şentürk et al., 2015). In addition, in some studies, the competence levels of classroom teachers regarding the implementation of the game and physical activities curriculum were found to be low and it was argued that teachers did not give the necessary importance to the lesson by stating that they did not know the physical activities curriculum sufficiently. Therefore, it was suggested that classroom teachers should be informed about the lesson, but above all, this lesson should be conducted by physical education and sports branch teachers, and it was thought that conducting the lesson by physical education teachers would increase the success in practice (Çivril-Kara et al., 2017; Ertan, 2013; Faucette et al., 1990; Morgan & Hansen, 2008; Pehlivan et al., 2005; Randal, 2022; Şentürk et al., 2015; Usher & Anderton, 2014; Yıldız & Güven, 2014). From this point of view, the fact that there are very few studies on the physical education and game lesson at the primary school level, and that only classroom teachers are generally included in the studies conducted, has revealed the need to obtain information about the process by involving stakeholders who are an integral part of the education and training process and who directly affect the process. It is thought that the education-training process is a whole, that the process is not only teacher-oriented, and that obtaining the opinions of all stakeholders who contribute to the process will provide information in terms of the field of physical education and the efficiency of the physical education and sports lesson being implemented. In this context, the aim of the research is to examine the problems encountered by classroom teachers, parents and school administrators about the Physical Education and Game lesson curriculum and practices, to have an idea about the efficiency of the lesson, to see the communication link between stakeholders and to offer solutions about these issues.

METHOD

Research Model

Qualitative research method was used in this study, which aims to obtain the opinions of stakeholders, class teachers, parents and administrators, who play an active role in the process, regarding physical education and game lesson practices. Qualitative research is the basic research method that provides the opportunity to get to know the experiences gained in the field of education in more depth (Merriam, 2015). In this method, the aim is not to make generalisations about the researched subject, but to conduct in-depth research on a central phenomenon (Creswell, 2012). It tries to make sense of and interpret the individual's behaviour in the context of the current situation in a multidimensional way. Based on the understanding that individual behaviour can only be investigated with a flexible and holistic understanding, the opinions and experiences of the individuals participating in the study are of great importance (Yıldırım & Şimşek, 2018). Qualitative research has five designs: Culture analysis, phenomenology, theory building, case study, action research. In this study, phenomenology research design was adopted (Yıldırım & Şimşek, 2018). Phenomenology involves interviewing people who have experienced the

determined phenomenon personally (Creswell, 2018). Phenomenological approach is a process of examining “what” individuals experience and “how” they experience it, describing their experiences and interpreting the meaning of their experiences (Creswell, 2018). In addition, the phenomenological approach is divided into two as hermeneutic and empirical. According to Moustakas (1994), empirical phenomenology consists of determining the phenomenon and collecting data from people who have experienced the phenomenon. The researcher analyses the data by reducing the information obtained into meaningful statements or quotations and combines the statements into themes (Creswell, 2018). In addition, the researcher provides an overview of what people experience and how they experience it in terms of conditions, situations or context. In this context, the empirical phenomenological approach was determined in the research.

Study Group

The study group of the research consisted of 7 classroom teachers, 3 administrators and 3 parents who were included in the study on a voluntary basis. The study group of the research was determined by snowball sampling, one of the purposive sampling methods. In snowball sampling, the process starts with a very simple question: “Who might have the most knowledge on this subject? Who or whom would you recommend me to interview about this issue?” (Patton, 1987). When it was thought that data saturation was reached in the research through the sampling method, the interviews were terminated, and the research group was limited to these people. The demographic characteristics of the study group are given in Table 1, Table 2 and Table 3.

Table 1. Personal characteristics of the teachers

Participant	Gender	Graduation (University)	Seniority in the Profession	Seniority in the Institution
T1	Female	Afyon Kocatepe University	1 year	1 year
T2	Female	Anadolu University	28 years	18 years
T3	Female	Dokuz Eylül University	24 years	10 years
T4	Male	Anadolu University	46 years	7 years
T5	Female	Anadolu University	24 years	22 years
T6	Female	Anadolu University	25 years	22 years
T7	Female	Osmangazi University	20 years	7 years

Table 2. Personal characteristics of the administrators

Participant	Gender	Graduation (University)	Seniority in Management	Seniority in the Institution
A1	Female	Osmangazi University	6 years	6 years
A2	Male	Dokuz Eylül University	7 years	3 years
A3	Male	Çanakkale 18 Mart University	14 years	8 years

Table 3. Personal characteristics of parents

Participant	Gender	Age	Profession	Education Level
P1	Female	42	Officer	Bachelor's degree
P2	Female	39	Labourer	Bachelor's degree
P3	Female	35	Housewife	Secondary Education

Data Collection Tools

In the study in which stakeholder views on physical education and game lesson practices were investigated, interview technique was used as a data collection method. Different semi-structured interview forms were used for each stakeholder (classroom teacher, administrator, parent) in the study. Semi-structured interview forms were prepared by the researcher by taking into account the physical education and game lesson curriculum and reviewing the relevant literature, and the form was finalised by consulting two different experts in the field of qualitative research methods and physical education and sports. Individual interviews with the stakeholders were conducted with a voice recorder in order to help the researcher to remember and analyse the data obtained during the analysis. The interviews lasted an average of 15-20 minutes.

Ethical Approval

This study was performed in line with the principles of the Declaration of Helsinki. For this study, the ethics committee decision dated 05/05/2022 and numbered 8/5 was obtained from Eskisehir Technical University Social and Human Sciences Scientific Research and Publication Ethics Board.

Informed Consent

Participants in the research were informed about the study and a voluntary participation consent form was signed. In addition, they verbally confirmed that they participated in the study voluntarily during the interview.

Data availability

The datasets generated during and analysed during the current study are available from the corresponding author on reasonable request.

Data Analysis

The interviews recorded by the researcher were transcribed and the participants were coded according to their duties as classroom teachers T1-T7, school administrators A1-A3, parents P1-P3. Descriptive and content analysis were applied to the texts obtained. Firstly, the data were divided into meaningful sections and categories were formed in line with the participant responses. The categories obtained were then transformed into statistical schema and presented as descriptive expressions.

Validity and Reliability

Validity from the qualitative research framework includes determining the accuracy of the findings from the perspective of readers, participants and the researcher (Creswell & Miller, 2000). Snowball sampling, one of the types of purposive sampling methods, was used in the study and the opinions of participants with different perspectives on the subject were taken. Patton (2014) stated that four types of triangulations are used to confirm the accuracy and validity of qualitative analyses. These are;

1. Method diversity: Checking the consistency of findings generated using various data collection methods
2. Source diversity: Checking the consistency of different data sources within the same method
3. Analyser diversity: Use of more than one analyser checking the findings
4. Diversity of theories/perspectives: Use of various perspectives or theories in interpreting the findings.

In this study, source and analysis triangulation was used. The findings obtained from the interviews were interpreted by considering the statements of classroom teachers, school administrators and parents. This shows that data sources were triangulated. After the interview data were transcribed, confirmation was obtained by listening to the audio recording of an external person and necessary arrangements were made. In this way, analyser triangulation was ensured. In addition, participant diversity was also ensured by taking into account the views of different groups and selecting participants working in different institutions.

At the same time, in order to increase credibility, the interviews with the participants were organised in a semi-structured format. In this way, depth-oriented data collection was ensured. In order to increase consistency, the data obtained were presented directly without interpretation, and the audio recordings were confirmed by having an outsider listen to the audio recordings and follow the text. On the other hand, the research process and what was done in this process are reported in detail in the method section of the study.

RESULTS

Qualitative Findings from Teacher Interviews and Comments

In this section, the views of the classroom teachers on physical education and game lesson were included and the data obtained were presented as statistical diagrams and descriptive expressions.

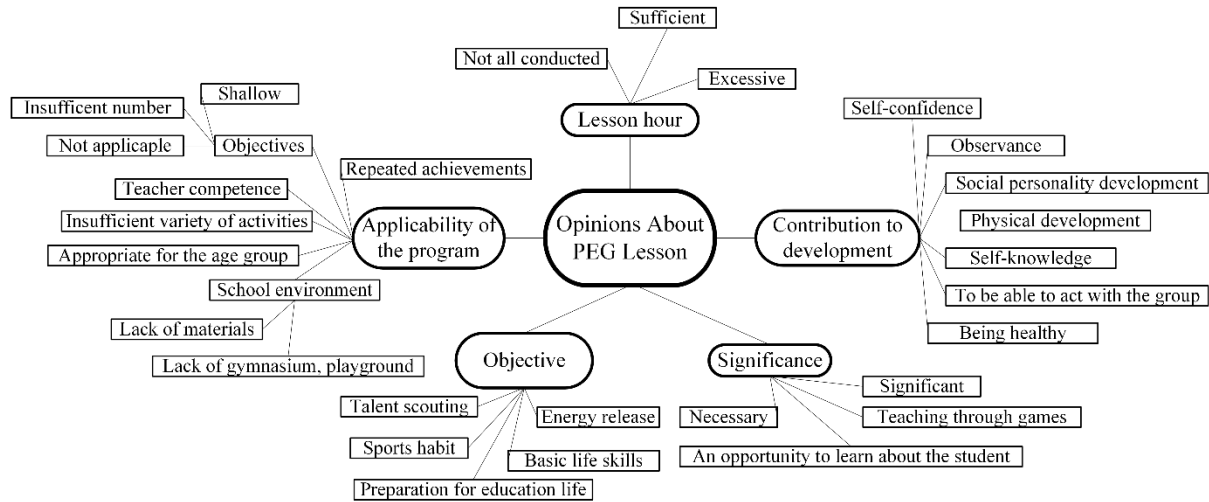


Figure 1. Classroom Teachers' Opinions about the PEG Lesson

All the classroom teachers who participated in the study stated that they considered physical education and game lesson important and that this lesson contributed to the mental, physical, and social development of children. Besides, they stated that the lesson has aims such as talent scouting, providing children with basic movement skills, making them acquire sports habits and preparing them for the next educational life. When the applicability of the physical education and game lesson curriculum is examined, it is seen that the objectives are insufficient in terms of number and quality, the achievements are repeated, and the type of activities is insufficient. Moreover, the fact that school environments are not suitable for physical education and game lessons and that teachers do not have enough knowledge in the field of physical education were expressed as factors affecting the applicability of the programme. Although the weekly lesson hours of the physical education and game lesson are generally considered sufficient, the common view that the entire lesson cannot be done due to such reasons as school environment and academic anxiety draws attention. Sample participant statements on this subject are as follows;

T3: "As a matter of fact, we only write the achievements in line with the aims stated in the programme in the notebook. I don't think we can implement all of them because we fall short somewhere. But if the objectives in line with the aims are implemented, I think it will be of great benefit for every child when they go to secondary school and meet the physical education teacher."

T2: "Physical education and game is a lesson in which the child develops both physically and spiritually and rests themselves and rests their brain. It can give important clues to the class teacher about the child's spiritual development. Physical education lesson touches on all areas such as being healthy, staying healthy, balanced and regular nutrition when we look at it comprehensively."

T5: “The most problematic thing for me is to look at the outcome and decide what to do about that outcome. If we had resources that we could benefit from, it could be a healthier process. What I can say as a deficiency in the programme is that the learning outcomes repeat each other.”

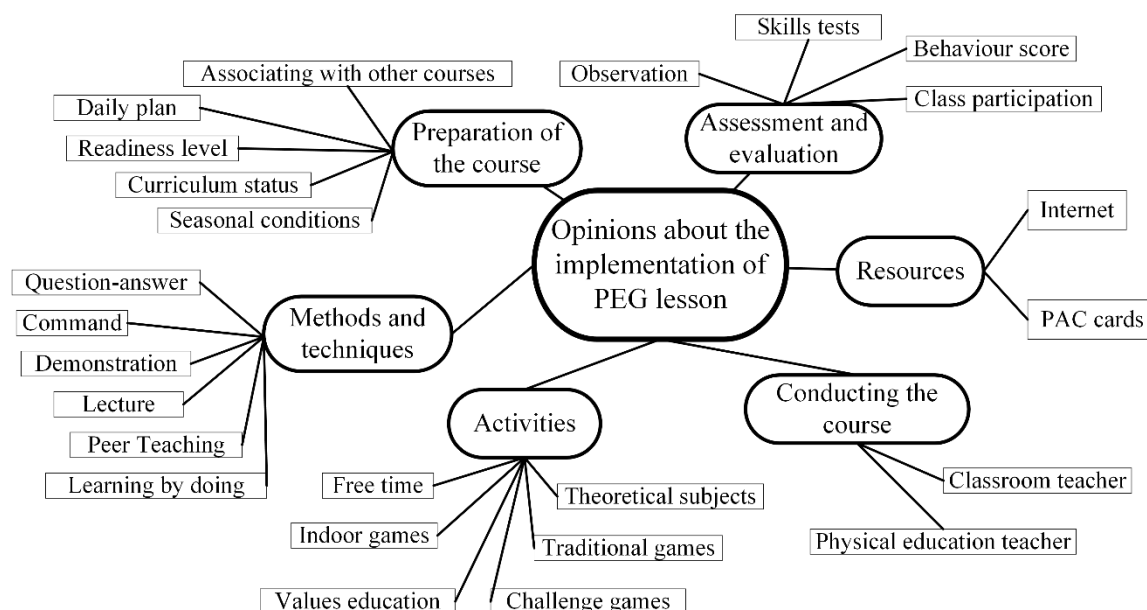


Figure 2. Classroom Teachers’ Opinions on PEG Lesson Practices

Analysis of the opinions of the classroom teachers about the physical education and game lesson practices revealed that they paid attention to the current weather conditions, curriculum status, students’ readiness levels and the presence of activities related to other lessons while preparing for the lesson. It was seen that they mostly utilised internet resources and then Physical Activity Cards (PAC) in the lessons. It was determined that none of the classroom teachers who participated in the study had any information about the *I Play Games* compilation booklet. In terms of the activities that the classroom teachers did in their lessons, it was seen that they included indoor games, challenge games and traditional games, as well as theoretical explanations of subjects such as healthy nutrition included in the programme. It was concluded that they taught values education with activities in their lessons and sometimes they used the lesson as free time. It was found that classroom teachers generally used methods and techniques related to behaviourist approach in physical education and game lessons, especially command, lecture, and demonstration. In addition, it was determined that they also included question-answer, learning by doing and experiencing and peer cooperation methods in their lessons. It was also determined that classroom teachers evaluated their students within the scope of physical education and game lesson mostly by taking observation, behaviour grade and participation to the lesson into consideration, and a few teachers also conducted skill tests as well. Classroom teachers stated that the most important requirement for achieving the objectives of the physical education and game lesson is that the lesson should be conducted by physical education teachers, and in addition, they emphasised that classroom teachers should participate in in-service trainings to increase their equipment in the field of physical education.

T4: “The games and physical education activities we play at each grade level are different. We arrange the children in groups, boys and girls, in single pair order and we do physical education activities that develop their hand, eye and arm coordination such as throwing, holding, jumping, running, bending, etc. in various types of competitions. Attention-grabbing games in the classroom in cold weather....We carry out the lesson with in-class activities that will also improve children’s attention levels.”

T7: “I have a children’s games book that I use as a source....We also make use of the internet. We used the physical activity cards a lot when they first came out, but to be honest, we don’t use them much anymore and I don’t have them. I have heard about the I’m playing a game compilation booklet for the first time from you. We used to use the guidebook before, but I don’t have it now.”

T4: “We generally use teacher-dominated methods, or I want the leader children to set an example by making them do that movement and show it to their friends. I decide on these methods according to my opinion.”

T6: “Frankly speaking, we don’t know what kind of assessment we will make as classroom teachers because it is not our branch....We assess children individually according to the learning outcomes. But there is nothing in writing. It is in the form of observation.”

T3: “Of lesson, physical education teachers should conduct physical education classes, not only for physical education and game, but also for visual arts and music. How can I explain something I don’t understand? If a physical education teacher were to come, for example, those children would be much more successful, and their inner gems would come out. In other words, everything should be done by specialists.”

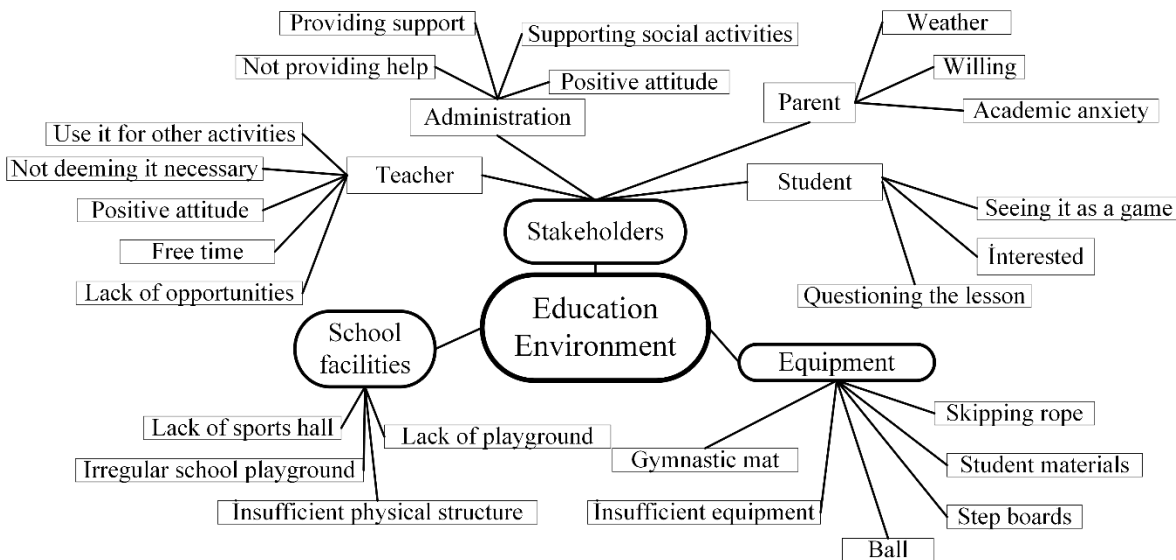


Figure 3. Classroom Teachers’ Opinions about the Educational Environment for the PEG Lesson

Analysis of the opinions of classroom teachers about the educational environment showed that the lack of a gymnasium in schools in terms of school facilities, irregular and small school gardens, and the lack of playgrounds negatively affected the functioning of physical education and game lesson. Besides, it was stated that there were great deficiencies in primary schools in terms of

materials, and that the materials to be used for the lesson were either non-existent or limited in number. It was also stated that the materials available were balls, step boards, jump ropes, gymnastic mats and that the students brought their own materials.

Evaluation of the attitudes of the stakeholders of the process from the perspective of the classroom teachers revealed that other classroom teachers did not show the necessary importance and care to the physical education and game lesson because it was generally considered as free time, and so limited activities could be carried out in line with the possibilities. It was observed that the school administration had a positive attitude towards the physical education and game lesson in general and tried to overcome the existing deficiencies in line with their budget. Although parents were more interested in physical education and game lesson than previous years, they considered the weather conditions as the biggest problem and hesitated to give importance to physical education and game lesson due to academic anxiety. It was stated that the students were interested in this lesson, questioned the reasons when the lesson was not held and generally saw the lesson as a game. Participant statements on this subject are as follows;

T5: "We have no facilities. There is not even a ball.... They bring their materials. We try to manage that way. We don't even have a cushion. I think negatively about the adequacy of our school."

T7: "We have an asphalt garden. Unfortunately, we don't have a sports hall or things like balls, ropes. We only have step boards, and someone donated them to the school to make activities.... I do not find the facilities of our school sufficient."

T3: "To tell the realities of Turkey, there are eighteen classroom teachers in the school. About three of them take the children out to the garden and do activities, the other teachers take the children out to the garden but they themselves sit on the bench. That is about three teachers out of twenty, very few, unfortunately."

T7: "The administration supports sports, directs students to sports lessons, and organises lessons in different branches at school. If there is something we want, they do their best to provide it, but if it is based on material things, they cannot help much within the scope of the primary schools' allowance."

T5: "The truth is that parents give more importance to academic success. For them, the child's success in maths is very important, but very few think about whether the child has any sporting or physical talent, what can I do to improve it? But in the class I teach now, I receive support in this regard."

T3: "Students love physical education lessons very much. But I fall short".

Qualitative Findings and Comments Obtained from Administrator Interviews

In this section, the opinions of the administrators were included, and the data obtained were presented as statistical diagrams and descriptive expressions.

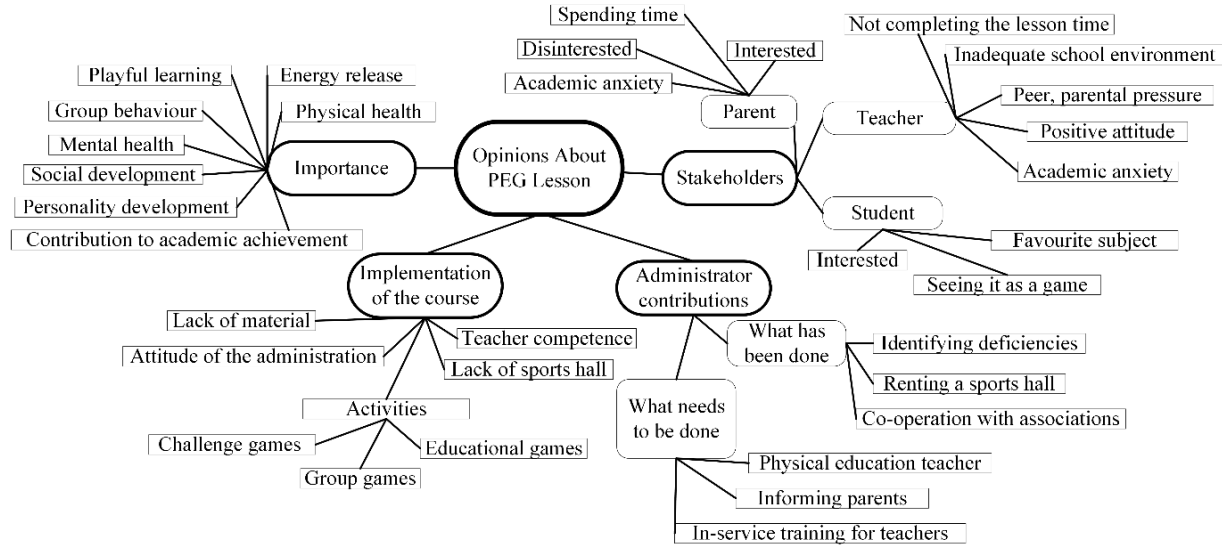


Figure 4. School Administrators' Opinions about the PEG Lesson

It was concluded that all the school administrators who participated in the study considered the physical education and game lesson important and stated that the physical education and game lesson contributed to the physical, mental, social and personality development of the students, as well as having some benefits for them to release their energy, to adapt to the rules and to increase their academic success. Analysis of the statements of the administrators about the implementation of physical education and game lesson from the perspective of the administrators showed that such problems as lack of materials and lack of sports halls negatively affected the implementation of the lesson. In addition, it was stated that the competences of classroom teachers in the field of physical education significantly affected the quality of the lesson. In this context, it was stated that the activities carried out within the scope of the lesson were generally limited and repetitive, and activities such as educational games, challenge games, and group games were carried out. Analysis of the statements of the administrators about the attitudes of the stakeholders of the process revealed that their classroom teachers actually had a positive attitude towards the lesson, but they could not fully fulfil the requirements of the physical education and game lesson due to such factors as academic anxiety, environmental pressure, and insufficient school environment. It was stated that some of the parents were interested in the lesson while others showed no interest at all, and it was added that the parents generally regarded the physical education and game lesson as a way of spending time rather than a lesson and that their academic anxiety was high. On the other hand, they said that it was the favourite lesson of the students, that they were very interested in the lessons, but they regarded it as a time to play games rather than a lesson. It was observed that school administrators produced different solutions within the scope of contributing to the physical education and game lesson. Collaborating with associations, businessmen, foundations, renting the sports halls in the neighbourhood, identifying the deficiencies, and eliminating them with their own means have emerged as solutions. The administrators stated that it is important to involve physical education teachers in the process in order to increase the quality of physical education

and game lesson, to convey the importance of physical education to parents and to participate in in-service training to increase the competence of classroom teachers in the field. Participant statements on this subject are as follows;

A1: "I definitely think that it is a very important lesson, because especially in primary and secondary school children, they definitely need to be discharged. In addition, the lesson time in primary school is already equivalent to mathematics. If this lesson is done effectively by teachers, I believe that it will contribute to academic success at the same rate.....I think that children are already sufficiently crushed under the academic burden of other lessons. especially in today's education system."

A3: "Actually, teachers are conscious about this. But since social pressure, parental pressure, environmental pressure are very strong in the academic field, since everything in the country is determined by exams, since all processes are determined by exams, they are necessarily crushed under this pressure and they are forced to turn to the academic field much more."

A2: "Our biggest disadvantage in this lesson is actually our garden. Apart from that, I think that all our teachers do not examine the annual programmes or the changing education programmes sufficiently...If they were examined effectively every year, I think that several negativities for children would be eliminated."

A3: "I think the biggest deficiency in this subject is that physical education teachers cannot find a place in primary schools. If this lesson is carried out by experts in the field, I believe that it will be much more purposeful and efficient. Considering the current conditions, I think that classroom teachers should be given in-service training. The importance of the lesson, the requirements of the lesson are explained in detail and by directing them to the right activities, it will definitely be reflected in the quality of physical education lessons."

Qualitative Findings from Parent Interviews and Comments

In this section, the opinions of the parents of the students were included and the data obtained were presented as statistical diagrams and descriptive expressions.

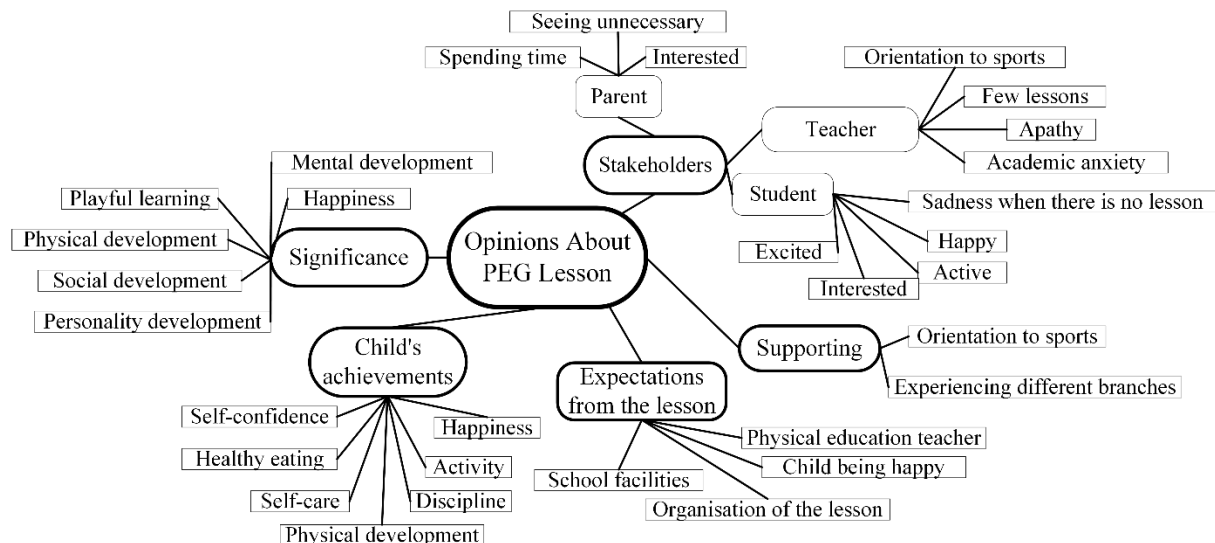


Figure 5. Parents' Opinions about the PEG Lesson

It was revealed that all the parents who participated in the study considered physical education and game lesson important and thought that they affected mental, affective development and social behaviours as well as physical development in children. It was reported that children gained self-confidence, developed healthy eating habits, were active, happy and disciplined thanks to physical education and game lesson. Parents stated that classroom teachers generally had a negative attitude towards physical education and game lesson. It was revealed that they did not fully fulfil the requirements of the physical education and game lesson and gave more importance to other lessons. While some of the parents in the school seemed to be interested in physical education and game lesson, it was determined that others were not interested at all and regarded it as a means of spending time. The parents reported that their children who participated in physical education and game lesson were excited about the lesson, were happy and active in the lesson, and that the children told their parents at home about the activities carried out in the lesson. In addition, they stated that when physical education and game lessons were not held, their children were unhappy and expressed their complaints. It was revealed that the parents directed their children to sports and encouraged them to try different branches. The expectations of the parents within the scope of physical education and game lesson were expressed as; the lesson should be carried out by physical education teachers, school facilities should be made suitable for the lesson, and the lesson should be carried out regularly by class teachers. Participant statements on this subject are as follows;

P1: "I think that physical education and game lesson provides physical, mental and social development in children and increases their school success."

P2: "I cannot say that they do much during lessons related PEG. We don't have a sports hall in our school anyway, when the weather is nice, they do one or two lessons in the garden, but other than that, physical education lessons are not taught much.... I think they have a negative attitude."

P2: "Mathematics and Turkish are more important in today's Turkey. Turkish and mathematics are usually taught in sports and art lessons. Therefore, it is better if each branch has its own teacher."

P3: "We definitely do not receive any feedback about physical education lessons like "we do physical education, but your child has this talent." The teacher only gives feedback such as he/she is very good at maths, good at numeracy, good at verbal, etc."

P3: "I want them to be happy, to release their energy, harmony, coordination, communication with people, success, self-confidence In addition, I would like schools to be more conscious about this issue. Children have long hours of lessons, physical education lessons help them to relax, but this lesson can be more professional. Just as different teachers come for religion lesson and English, I would like to see specialised teachers for physical education too."

DISCUSSION AND CONCLUSION

Discussion on the Results of the Interviews with Classroom Teachers

The place of physical education and game lesson in the education process was found to be important by the classroom teachers and it was stated that it provided students with the opportunity for multidimensional development. The fact that children in the primary school group are at the age of play and that learning is easier through play have emerged as the points that make physical education and game lesson important. In many of the studies on physical education and game lesson, the conclusion that physical education lessons play an important role in the development of children is in parallel with our study (Dağdelen & Kösterelioğlu, 2015; Ceylan, 2015, Usher & Anderton, 2014, Mcyeagh et al., 2022).

The weekly lesson hours of the physical education and game lesson were generally found to be sufficient by the classroom teachers, but it was revealed that they could not fully complete the weekly lesson hours and used a few lesson hours to teach other lessons. In a study conducted by Randall (2022) with trainee classroom teachers, it was found that teachers did not allocate enough time to physical education classes because they spent more time on subjects such as maths, science, and English. Similarly, Sherman et al., (2010) argued that there is pressure on teachers in public primary schools to focus on literacy and mathematics, which prevents teachers from including regular and adequate physical activity programmes in their curriculum. As mentioned in the literature, not fully fulfilling the requirements of physical education lessons, seeing it as a leisure time activity, and using it for other lessons are common results (Çivril-Kara et al., 2017; Dağdelen & Kösterelioğlu, 2015; McKenzie & Patterson, 1990; Morgan & Bourke, 2008; Morgan & Hansen, 2008; Şentürk et al., 2015; Usher & Anderton, 2014). While these results are in parallel with our study, Ceylan (2015) reported that physical education lesson was conducted by classroom teachers in a timely and organised manner and was in accordance with its purpose. This result contradicts the result of our study.

It was found out that classroom teachers make limited use of auxiliary resources within the scope of physical education and game lesson, and it was concluded that they use traditional teaching methods in their lessons and the activities are repetitive. Gordon and Inder (2000) concluded that traditional games and activities such as relay races and dodgeball are generally included in physical education lessons and that classroom teachers do not have the necessary skills to perform different activities and therefore have limited opportunities for students to develop their skills. On the contrary, the result of Dağdelen and Kösterelioğlu (2015) that teachers use "*I Play Games Compilation Booklet*" and "*Physical Activity Cards*" as much as possible contradicts the result of our study.

There are studies that support the conclusion that the conduct of physical education and games lessons by physical education teachers increases the efficiency of the lesson and is an important factor in achieving the objectives of the programme (Morgan, 2008; Pehlivan et al., 2015; Şentürk

et al., 2015; Yıldız & Güven, 2014). Lynch and Soukup Sr, (2017) suggested that appropriate opportunities for physical education teachers should be provided in general primary grades, which offer a universal direction to optimise the holistic education of children. McKenzie et al., (1995) stated that when physical education teachers are removed from schools, significant decreases in regular physical activity time and basic skill development are witnessed, and so physical education classes should be conducted by physical education teachers. Çivril-Kara et al., (2017) stated as the most striking finding of the study that "classroom teachers consider themselves inadequate in the physical education and games lesson and in addition, they think that the physical education teacher should be the conductor of the lesson because they are more knowledgeable and conscious about the lesson". Apart from these results, Faulkner et al. (2008) found no significant difference between the qualities of physical education lessons conducted by classroom teachers or field experts. This result contradicts with the result of the study.

In addition to the conclusion that conducting physical education and games lesson by physical education teachers would make the lesson more efficient, it was also concluded that in the current education system where the lesson continued to be conducted by classroom teachers, regular in-service training of classroom teachers would contribute to the efficiency of the lesson. Morgan and Bourke (2008) emphasised that the principle of teacher training, supply and development should be considered as a first priority in order to increase opportunities for all classroom teachers to achieve competence and professional development. Fletcher and Mandigo (2012) stated that if classroom teachers continue to be responsible for physical education teaching, the need for regular professional development for classroom teachers is very important and emphasised the importance of in-service training.

It was determined that situations such as inadequate physical conditions and lack of equipment in primary schools negatively affect the efficiency of physical education and games lesson, and similar results were found in existing studies (Bozdemir et al., 2015; Can & Çava, 2018; Yıldız & Güven, 2014). Jerkinson and Benson (2010) reported that the most important barriers to the efficiency of physical education classes are access to facilities, appropriate teaching areas and equipment. In addition, Morgan and Hansen (2008) stated that obstacles such as time, materials, inadequate facilities and administrator attitudes affect the quality of physical education lessons. In contrast, Usher and Anderton (2014) reported that all participants reported that recreational facilities and equipment were accessible, well maintained and in good condition.

Results of interviews with school administrators

It was concluded that the place of physical education and games lesson in the education process is regarded important by school administrators. The study by Lynch and Soukup Sr (2017), in which school administrators stated that school administrators value and support physical education lessons in primary schools, supports the results of our study. The school administrators' knowledge of the developmental characteristics of children, the fact that teaching with play is of great importance for primary schools because children are in the age of play, and the awareness that it

is possible to ensure the multidimensional development of children through physical education and games lesson can be counted among the reasons why they find the lesson important.

It was stated that the physical conditions in schools are not suitable, lack of equipment and equipment have a negative impact on the quality of physical education and games lesson. It was revealed that administrators are generally aware of the deficiencies in this subject and apply different ways as a solution and make efforts to eliminate the problems in line with the existing opportunities. Morgan and Hansen (2007) stated that the success of teachers in physical education depends on a team with strong leadership in school administration and emphasised the importance of school administration to develop strategies to improve the quantity and quality of resources, facilities and materials to support physical education programmes.

It is understood from the statements of the school administrators that classroom teachers have a positive attitude towards physical education and games lesson, but they cannot fully fulfil the requirements of the lesson, which might be because the physical conditions of schools are not suitable for physical education, primary schools are not provided with the necessary material support, and classroom teachers are not sufficiently familiar with the field of physical education.

Results of interviews with parents

The place of physical education and games lesson in the education process was found to be important by the parents, and the fact that children could develop in many ways through physical education can be counted among the reasons why it was considered important by the parents. In line with the statements of the parents, although physical education lessons are considered important, the fact that they prioritise academic success creates a contradiction. It can be said that the main reason for this is that the education system in the country emphasizes academic achievement and the distribution of students in the education levels is based on academic achievement.

Parents reported that classroom teachers had a negative attitude towards physical education and games lesson and that they did not carry out their lessons regularly. Inadequate physical structure in schools, education system, school administration and parents' pressure on classroom teachers focused on academic success can be counted as the reasons for this situation. Another result of the study is that parents provide support to their children in the field of sports, but they do not do this in the context of the school, but rather with different institutions outside the school. It can be said that the reason for this is that the current education system does not give primary school students the opportunity to do sports under the roof of the school and that school-family cooperation is not provided at a sufficient level. Parents emphasised that physical education and game lesson should be conducted by physical education teachers who are experts in the field and who can be more effective in scouting and guiding children's talents, and they stated that the fact that classroom teachers do not have enough knowledge of the field and are not interested in the field reduces the quality of physical education and games lesson. In the study conducted by Cihan and Tekçe (2022)

with preschool parents, it was stated that the implementation of the physical education lesson by physical education teachers who are experts in their field would be beneficial, which supports the views of the parents in this study.

SUGGESTIONS

As a result, it is thought that in-service training in the field of physical education will contribute positively to the quality of physical education and games lesson by providing regular in-service training in the field of physical education to classroom teachers who serve as the instructors of the lesson in the current education system. Besides, it is thought that inclusion of physical education teachers, who are experts in the field, in the process in terms of achieving the objectives required by the physical education and games lesson curriculum is important for the efficiency of the lesson. In this context, it can be suggested that relevant arrangements should be made in the current education system and the task of conducting the physical education and games lesson should be transferred to physical education teachers. Moreover, seminars can be provided for parents and school administrators, who are the stakeholders of the education process, about the importance of physical education and games lesson, the benefits of regular physical activity, and healthy nutrition. In this way, all stakeholders who play an active role in the education process can act in cooperation and fulfil the requirements of the physical education and games lesson curriculum. In addition to all these suggestions, the needs of the schools can be determined in order to eliminate the lack of space and materials that affect the quality of the physical education and games lesson from an important point, and the needs can be met by cooperating with local administrations or different institutions. For future research, the generalisability and depth of the studies can be increased by adding quantitative research methods to the studies examining the opinions along with qualitative research methods. Other stakeholders who play a role in the education and training process can be included in the research. In addition, in-service training seminar suggestions can be developed in order to eliminate the problems experienced in the physical education and games lesson and to increase the effectiveness of the curriculum. The findings obtained for in-service trainings can be transferred to the ministries and related stakeholders and it can be suggested to the researchers to carry out development and improvement studies in curricula.

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Authors' Contribution: Study Design-DYS, data collection, statistical analysis, manuscript preparation- CNA. All authors read and approved the final manuscript.

Ethical Approval

Ethics Committee: Eskişehir Technical University Social and Human Sciences Scientific Research and Publication Ethics Board

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Özel Gereksinimli Bireylerin Gözünden Görmek

Mustafa İnan ÖZANT^{1*}, Merve KARAMAN ÇAM¹, Tebessüm AYYILDIZ DURHAN¹,

Ekrem Levent İLHAN¹

¹ Gazi Üniversitesi, Ankara, Türkiye.

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Öz

Bu çalışma, özel gereksinimli bireylerin gözünden goalball, oturarak voleybol, işitme engelli futbolu ve otizmlili bireylerle çeşitli etkinliklerin deneyimlenmesi konusunda gerçekleştirilmiştir. Araştırmaya 266 üniversite öğrencisi katılmış olup, etkinlikler öncesinde ve sonrasında yarı yapılandırılmış görüşme formu kullanılarak veriler toplanmıştır. Toplanan veriler, içerik analizi yöntemiyle incelenmiş, temalar, kategoriler ve kodlamalar kullanılarak yorumlanmıştır. Araştırmanın bulguları, katılımcıların özel gereksinimli bireylerin perspektifinden çeşitli etkinlikleri deneyimledikten sonra farklı tutumlar geliştirdiklerini göstermektedir. Etkinlik öncesi ve sonrası tutumlarla ilgili görüşlerin betimleyici istatistiklerine göre, etkinlik öncesi toplam görüşlerin %70'i olumsuz, %30'u olumluyken, etkinlik sonrasında bu oran %7 olumsuz ve %93 olumlu olarak değişmiştir. Bu bulgular, katılımcıların goalball, oturarak voleybol, işitme engelli futbolu ve otizmlili bireylerle yapılan etkinliklerle ilgili olumlu tutumlarının ciddi oranda arttığını göstermektedir. Araştırma sonuçları, özel gereksinimli bireylerin deneyimlerini onların gözünden değerlendirmenin ve benzer yaşantı hislerini anlamının önemini vurgulamaktadır. Bu tür etkinliklerin, katılımcılara özel gereksinimli bireylerin yaşamları ve zorlukları hakkında daha derin bir anlayış kazandırdığı görülmektedir. Ayrıca, bu tür deneyimlerin toplumun farklı kesimleri arasında empati ve anlayışı artırma potansiyeline sahip olduğu belirtilmektedir. Araştırma sonuçları, benzer etkinliklerin daha geniş çaplı uygulanmasının önerildiğini göstermektedir. Bu tür uygulamaların yaygınlaştırılması, toplumun özel gereksinimli bireyler hakkındaki algısını olumlu yönde değiştirebilir ve bu bireylerin topluma daha iyi entegrasyonunu sağlayabilir. Sonuç olarak, bu çalışma, özel gereksinimli bireylerle ilgili etkinliklerin hem bireylerin kendi deneyimlerini anlamaları hem de toplumdaki farkındalığı artırmada önemli bir rol oynayabileceğini göstermektedir.

Anahtar kelimeler: Özel gereksinim, Goalball, Oturarak voleybol, İşitme engelli futbolu, Otizm

Seeing Through the Eyes of Individuals with Special Needs

Abstract

This extensive research delves into the profound impact of sports and activities designed for individuals with special needs on university students' perspectives. The study included 266 participants who engaged in sports like goalball and sitting volleyball, which are tailored for those with special needs. The main objective was to assess how these activities influenced students' perceptions and attitudes towards individuals with disabilities. Before and after participating in these activities, semi-structured interviews were conducted to gather data. The analysis of this data revealed a remarkable shift in students' attitudes. Initially, 70% of the students had negative perceptions of individuals with special needs; however, this number drastically decreased to 7% post-participation. Conversely, positive perceptions surged from 30% to an impressive 93% following the activities. These findings highlight the profound effectiveness of experiential learning in shaping more inclusive and empathetic attitudes towards people with special needs. The study underscores the importance of deeply understanding and empathizing with the experiences of individuals with disabilities. Moreover, it advocates for the integration of such experiential learning modules into educational settings, suggesting that these experiences can significantly transform perceptions. The research strongly recommends expanding similar programs. This emphasis on experiential education is pivotal for promoting a more inclusive society, as it plays a crucial role in transforming perceptions and attitudes towards individuals with special needs. The study provides compelling evidence that engaging with and understanding the experiences of people with special needs can lead to more compassionate and inclusive communities.

Keywords: Special needs, Goalball, Sitting volleyball, Experiential learning

* Sorumlu Yazar: Mustafa İnan Özant, Eposta: inanozant@gmail.com

GİRİŞ

Özel gereksinimli olmak; fiziksel, duyuşal, zihinsel, bilişsel ve gelişimsel olabilen kısmi veya tam bir bozukluğun veya bunların birleşiminin, bireyin günlük faaliyetlerinde "normal" kabul edilen şeyleri uygulama ve bunlara katılma becerisinde kısıtlamalarla sonuçlanan bir durum olarak nitelendirilmektedir (Attia, 2016). Bir diğer tanımda özel gereksinimli bireyler, bireysel öznellik ile birlikte vücut değişikliklerini, evrensel işlevsel kapasiteleri ve yaşam durumlarını ayırtıran özelliklere sahip kişiler olarak nitelendirilmektedir (Hamonet ve Magalhães, 2003). Özel gereksinimli bireylerin genel bireylerden farklı olarak duyuşal, sosyal, fiziksel, zihinsel veya bilişsel açıdan sağlık hizmetlerine, rehberliğe, danışmanlığa ve eğitime ihtiyaç duyan özel gereksinimli bireyler olduğu sonucuna varılabilir (Ediyanto vd., 2022). Özel gereksinim kategorisinde değerlendirilen bireyler ekstra kaynaklara ihtiyaç duyan pek çok farklı yelpazede sınırlılığı olan çeşitli bireyleri kapsamaktadır (Kozibroda, 2020).

Özel ihtiyaçları olan çocukların normal aktivitelere katılabilmelerini ve bağımsızlık becerilerini geliştirebilmelerini sağlamak için eğitim, destek ve toplumsal kaynakları da içeren kapsamlı bir bakım yaklaşımına ihtiyaç vardır (Attia, 2016). Dolayısıyla özel eğitim ihtiyaçları olan bireyler, eğitim ve bakım süreçlerinde sorunlu olarak değil, çok yönlü, öğrenen bireyler olarak konumlandırılmalıdır (Heiskanen vd., 2018). Bu yolla özel gereksinimli bireylerin sosyal yaşama kazandırılması bakımından fiziksel aktiviteler önem teşkil etmektedir.

Sosyal katılımı artıran uygulamalar, genelleştirilmiş ortamlarda özel gereksinimli bireyler için eğitimsel ve sosyal sonuçları iyileştirebilir (Ciechalski ve Schmidt, 1995). Psikolojik olarak özel gereksinimli bireyin sosyal özellikleri normal bireylerden farklılıklar göstermektedir. Fiziksel kısıtlamalar nedeniyle öz saygısı düşük olan özel ihtiyaç sahibi kişi, başkalarıyla sosyal etkileşimden kaçınma eğilimindedir (Zwagery, 2018). Bu açıdan değerlendirildiğinde özel gereksinimli öğrencilerin sağlıklarının korunması aynı zamanda etkili bir eğitim, öğretim ve sosyalleşme sağlamak için yenilikçi yöntem ve teknikler kullanılması büyük önem taşımaktadır (Avdonina ve Gurieva, 2020). Özel gereksinimli bireylerin sahip toplumla etkili iletişim kurabilmeleri ve bilişsel süreçlerini geliştirebilmeleri için görsel algı gelişimini de içeren özel bakım ve eğitime ihtiyaçları vardır (Al-Qurba, 2018). Dolayısıyla özel eğitim yoluyla, onların benzersiz ihtiyaçlarını etkili bir şekilde karşılamak için istisnai öğrenci gruplarına değil, bireysel istisnai öğrencilere odaklanmalıdır (Kauffman, 2015).

Özel eğitim süreçlerinde fiziksel aktivite bireylerin fiziksel ve sosyal etkinliğini ve yetkinliğini artırmak adına önemli bir yer tutmaktadır. Bu doğrultuda goalball, oturarak voleybol, işitme engelli futbolu ve otizmlili bireyler ile çeşitli etkinliklerin özel gereksinimli bireylerin topluma kazandırılması süreçlerine olumlu katkı sağladığı varsayılmaktadır. İlgili faaliyetlere katılımın bir diğer grup tarafından deneyimlendiği, bedensel ve zihinsel çeşitli sınırlılıklar yaşayan bireylerin gözünden etkinliklere katılımın test edildiği çalışmaların literatürde yeterli olarak yer almadığı değerlendirilmektedir. Bu doğrultuda özel gereksinimli bireylerin gözünden goalball ve oturarak voleybol, işitme engelli futbolu ve otizmlili bireyler ile etkinlik gibi fiziksel ve sosyal etkinlikleri içinde barındıran iki branşın deneyimlenmesi bu çalışmanın amacını oluşturmaktadır.

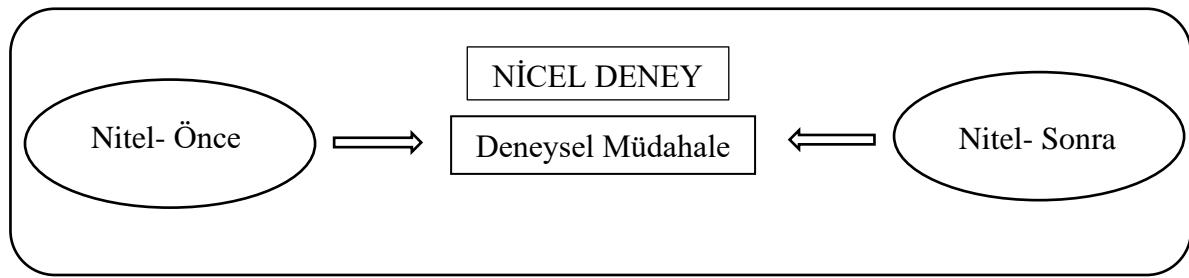
METOT

Araştırmanın Modeli

Bu araştırma nicel ve nitel yöntemlerin bir arada kullanıldığı karma yöntem araştırmasıdır. Karma yöntem araştırması bir tek araştırmada veya yakın ilişkili çalışma dizisinde nicel ve nitel verilerin veya tekniklerin birleştirildiği veya karıştırıldığı bir araştırma yaklaşımıdır (Christensen vd., 2015). Karma yöntem uygun araştırma problemleri, tek veri kaynağının yetersiz olduğu, sonuçların açıklanması gerektiği, birinci yöntemi geliştirmek için ikinci bir yöntemin gerektiği ve genel bir araştırma amacının en iyi şekilde birden fazla aşama ve proje ile ele alınabildiği araştırma problemleridir (Creswell ve Clark, 2015).

Karma yöntem araştırmalarında birçok desen kullanılmaktadır. Bu araştırmada iç içe desen kullanılmıştır. İç içe deneysel karma yöntem deseni durumunda, araştırmacılar bu yöntemi, nitel veriyi, daha baskın nicel çalışma içindeki ikincil araştırma sorusunu cevaplarken işin içine katma durumundadır. Deneysel örnekte araştırmacı, toplama prosedürünü iyileştirmek, müdahale surecini test etmek katılımcıların deneye katılım konusundaki tepkilerini açıklamak gibi sebeplerden dolayı nitel veriyi kullanır (Creswell ve Clark, 2015).

Literatürdeki en yaygın iç içe desen tipinin, araştırmacının nitel verileri deneysel desenlerin gömmesi ile ortaya çıkan desen tipi olması sebebiyle, yapılan bir deney öncesi ve sonrasında nitel verilerin uygulamaya katılması prosedürü hakkında bir genel görünüm sağlaması için kullanılmıştır. Başlıca adımlar şöyle sıralanabilir: (1) genel deneyi tasarlamak ve nitel verilerin hesaba katılmasının gerekçeleri üzerinde karar vermek, (2) deneysel desenlerin iyileştirilmesi için nitel verilerin toplanması ve analizi, (3) nitel çıktıları verilerin deneysel grup için toplanması ve analizi (4) nitel sonuçların deneysel prosedürleri ve deney sonuçlarının anlaşılabilirliğini nasıl güçlendirdiğini açıklamak (Creswell ve Clark, 2015; Şekil 1).



Şekil 1. İç içe desen işlem sırası

Araştırmamızda da içi içe desen işlem sırasına göre öncelikle nitel yöntemler aracılığıyla veriler toplanarak analizleri yapıldıktan sonra nitel araştırma grubu katılımcıları nicel araştırma çalışma grubu oluşturulmuştur. Nitel veriler deneysel uygulama öncesi ve sonrası ortaya çıkan değişimlerin gözlenmesine olanak sağlayacak şekilde toplanmış ve analiz edilmiştir. Son olarak ki yönteme ait sonuçlar raporlandırılmıştır.

Araştırmanın nicel yöntemi kapsamında çok sayıda elemandan oluşan evrende, evren hakkında genel bir yargıya varmak amacı ile, evrenin tümü ya da ondan alınacak bir grup, örnek ya da örneklem üzerine yapılan tarama düzenlemelerinden oluşan çalışılan konu hakkında gönüllü katılımcıların görüşleri alınarak araştırılan içerikle ilgili esnek ve geniş bir araştırma fırsatı sunan (Karasar, 2004) birden çok değişken arasındaki etkileşimlerin belirlenmesinde ve ölçülebilir değişkenlere ilişkin cevapların alınması; araştırmacının değişkenleri ve değişkenlere ait göstergeleri aynı anda çeşitli sorularla inceleyebilmesinde kullanılan ilişkisel tarama modeli kullanılmıştır (Şimşek, 2013). Nitel yöntemi kapsamında ise fenomenoloji (olgu bilim) yaklaşımı kullanılmıştır. Fenomenoloji geniş anlamı ile kuramsal bir görüş açısı olup yüzeysel değerinden kazanılan doğrudan deneyimi araştırır (Balcı, 2009). Fenomenoloji de amaç tüm olgunun tecrübeleri kapsayarak tanımlanmasıdır. Bu bağlamda fenomenolojik araştırma, bir tecrübenin esasen ne olduğuna ilişkin bir bakış açısı geliştirmekten yola çıkmaktadır. Fenomenolojinin ana amacının tecrübelerle ilişkin olarak daha geniş ve daha derin bir anlayış - kavrayış- sağlamak olduğunu söylemek mümkündür (Akturan ve Esen, 2008). Fenomenolojik yaklaşım, etkili, duygusal ve sıklıkla yoğun insan deneyimlerini çalışmak için uygundur (Merriam, 2013).

Araştırma Grubu

Araştırmanın nicel yöntem aşamasındaki çalışma grubu araştırma modelinde yer alan iç içe desene uygun olarak nitel verilerin toplandığı örneklem içerisinden oluşturulmuştur. Tesadüfi olmayan örnekleme yöntemlerinden kolayda örnekleme yöntemi ile 266 üniversite öğrencisi nitel ve nicel çalışma grubunu oluşturmuştur. Kolayda örnekleme, ana kütle içerisinden seçilecek örnek kesimin araştırmacının yargılarınca belirlendiği tesadüfi olmayan örnekleme yöntemidir (Haşiloğlu vd., 2015).

Veri Toplama Araçları

Araştırmada nitel verilerin toplanmasında etkinliklere katılımları öncesi ve sonrası görüşlerini almaya yönelik görüşme formu kullanılmıştır. Görüşme formunda özel gereksinimli bireylere yönelik duygu, düşünce ve davranışları hakkındaki görüşlerin alınabileceği etkinlik öncesi ve etkinlik sonrası görüşlerinin alındığı sorulardan oluşmaktadır. Veri toplama araçları şekil olarak aşağıda sunulmuştur.

Goalball: Gazi Üniversitesi Spor Bilimleri Fakültesi Rekreasyon Bölümü öğrencileri ile düzenlenen etkinlikte öncelikle etkinlik öncesi goalball tanıtımı yapılmıştır. Daha sonra goalball sahasına uygun şekilde düzenlenen alanda üçer kişilik gruplar halinde öğrenciler ayrılarak goalball kurallarına göre oyun oynatılmıştır. Oyuna başlamadan önce her bir öğrenciden etkinlik öncesi görme özel gereksinimli bireyler hakkında düşüncelerinin yazılması istenmiştir. Etkinlik bittikten sonra da tekrar düşüncelerinin yazılması istenmiştir.

Oturarak voleybol: Gazi Üniversitesi Spor Bilimleri Fakültesi Rekreasyon Bölümü öğrencileri ile düzenlenen etkinlikte öncelikle etkinlik öncesi oturarak voleybol tanıtımı yapılmıştır. Etkinlik Gazi Üniversitesi Spor Bilimleri Fakültesindeki voleybol salonunda yapılmış olup, bütün salon oturarak voleybol sahasına uygun şekilde düzenlenen alanda altışar kişilik gruplar

halinde öğrenciler ayrılarak oturarak voleybol kurallarına göre oyun oynatılmıştır. Oyuna başlamadan önce her bir öğrenciden etkinlik öncesi bedensel olarak özel gereksinimli bireyler hakkında düşüncelerinin yazılması istenmiştir.

İşitme engelli futbolu: Gazi Üniversitesi Spor Bilimleri Fakültesi Rekreasyon Bölümü öğrencileri ile düzenlenen etkinlikte öncelikle etkinlik öncesi işitme engelli futbolunun tanıtımı yapılmıştır. Daha sonra işitme engelli futbol sahasına uygun şekilde düzenlenen alanda yedi kişilik gruplar halinde öğrenciler ayrılarak takımlar oluşturulmuştur. Gazi Üniversitesinin futsal sahasında gerçekleştiren etkinlikte bütün oynayan öğrencilerin kulaklarına birbirlerini duymayacak şekilde kulaklıklar takılarak işitme engelli futbolu oyun kurallarına göre oyun oynatılmıştır. Oyuna başlamadan önce her bir öğrenciden etkinlik öncesi bedensel olarak özel gereksinimli bireyler hakkında düşüncelerinin yazılması istenmiştir.

Otizmlı bireyler ile çeşitli egzersizler: Gazi Üniversitesi Spor Bilimleri Fakültesi Rekreasyon Bölümü öğrencileri ile düzenlenen etkinlikte öncelikle etkinlik öncesi otizm konusu hakkında bilgi verilmiştir. Daha sonra Gölbaşı Başkan Otizm Gençlik ve Spor Kulübü Derneği ile yapılan iş birliği ile derneğin bulunduğu yerde ve etkinlik alanlarından yararlanılarak her iki kişiye bir otizmlı birey veriliş yakan top, voleybol gibi çeşitli oyunlar oynanmıştır.

Özel gereksinimli bireylerin gözünden goalball, oturarak voleybol ve otizmlı bireylerle ve işitme engelli bireylerle çeşitli etkinliklerin deneyimlenmesi sağlanmıştır.

Araştırma Yayın Etiği

Araştırma için Gazi Üniversitesi Etik Komisyonu'ndan 21.06.2022 tarihinde 2022-847 sayı ile etik kurul onayı alınmıştır.

Verilerin Toplanması

Araştırmada nitel verileri toplamak amacıyla etkinlik öncesi ve sonrası görüşlerinin alınması için Google Forms üzerinden anketler kullanılmıştır. Bu anket formunda, özel gereksinimli bireylere yönelik; katılımcıların, duygu, düşünce ve davranışları hakkındaki görüşleri alınmıştır. Ayrıca nicel ve nitel verilerin toplanacağı katılımcılara görüşmeye başlamadan önce de araştırmanın amacı çerçevesinde bilgi verilerek araştırmaya katılmayı kabul eden bireylerden gönüllü olduklarına dair Bilgilendirilmiş Gönüllü Olur Formu (Ek-2) alınmıştır. Araştırmanın nitel ölçme formu hazırlandıktan sonra alan uzmanı kişilerden değerlendirme istenerek gerekli değişiklikler yapıldıktan sonra nicel ölçme aracı pilot çalışması 10 katılımcıyla gerçekleştirilerek nicel ölçme aracı son haline getirilmiştir. Karma yöntemle göre uygulama öncesi nicel veriler 2022-2023 tarih aralığında katılımcılar ile yüz yüze toplanmıştır. Toplam 1300 nitel form uygulanmış 266 katılımcı çalışma grubunu oluşturmuştur. İkinci aşamada ise deneysel olarak yapılacak uygulamaların kuralları, düzenekleri ve tarih planlamaları yapılmıştır.

Verilerin Analizi

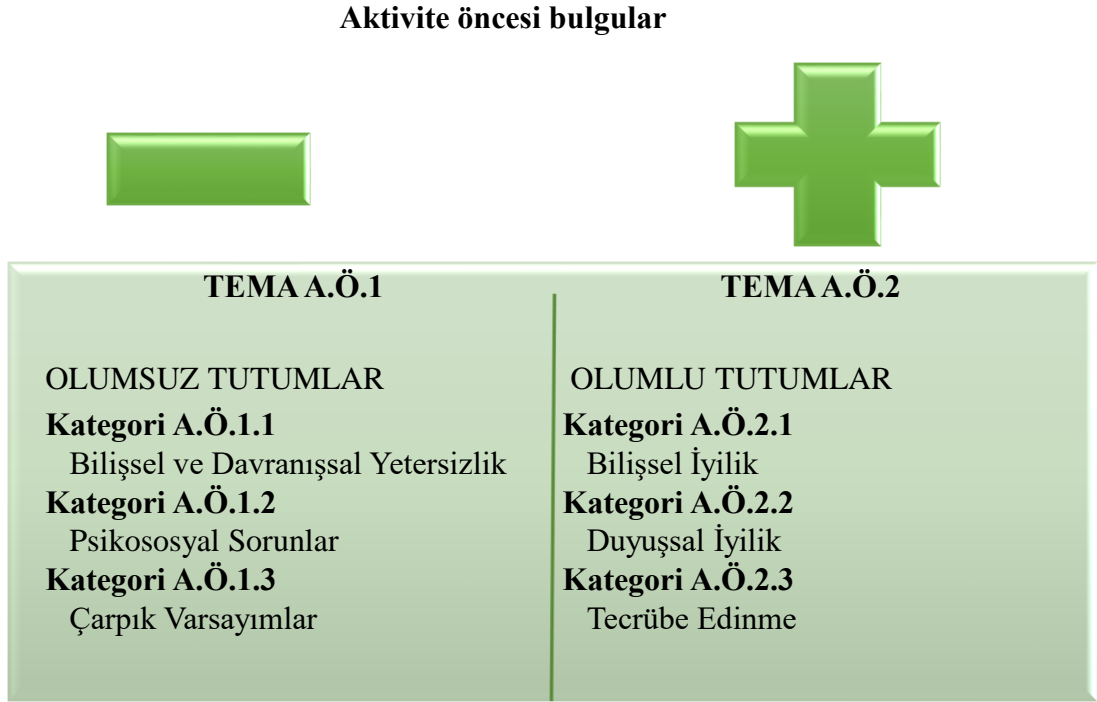
Araştırma kapsamında yarı yapılandırılmış görüşme formu ile toplanan nitel verilerin analizi için içerik analizi kullanılmıştır. İçerik analizinde temel amaç, toplanan verileri açıklayabilecek kavramlara ve ilişkilere ulaşmaktır. Bu temel amaç çerçevesinde, içerik analizinin yapılışında izlenen birtakım aşamalar vardır (Yıldırım ve Şimşek, 2008). Araştırmada nitel verilerin çözümlenmesinde öncelikle katılımcılarla yapılan görüşmeler yazıya dökülerek elektronik ortama aktarılmıştır. Aktarılan veriler her bir katılımcı için ayrı ayrı oluşturularak K1, K2, ..., K266 şeklinde isimlendirilmiştir. Analize başlamadan iç geçerlilik ve iç güvenirlik için önce her katılımcının formu satır satır, kelime kelime okunmuş düzenlemeler yapılarak katılımcılara kendi formları geri gönderilerek dönüt alıp doğrulanma sağlanmıştır. Bu aşamadan sonra içerik analizi verilerin kodlanması, temaların bulunması, kodların ve temaların düzenlenmesi, bulguların tanımlanması ve yorumlanması olmak üzere dört aşamada gerçekleştirilmiştir (Yıldırım ve Şimşek, 2008).

Tüm bu işlemlerden sonra iç geçerlilik ve iç güvenirlik için kategorilerin listesi ve görüş belirtme formlarının kopyası alan uzmanına verilmiştir. Uzman tarafından inceleme yapıldıktan sonra çalışmanın güvenilirliğini hesaplamak için başka bir uzmandan araştırmacı tarafından oluşturulan liste ve uzman tarafından oluşturulan ikinci listeyi eşleştirmesi istenmiştir. Görüş birliği ve ayrılıklarının sayıları belirlendikten sonra çalışmanın güvenilirliği, Miles ve Hubermann'ın (1994) "Güvenilirlik= ((Görüş Birliği) : (Görüş Birliği+Görüş Ayrılığı)) x 100" formülü kullanılarak hesaplanmıştır (Patton, 2014:147). Bu araştırma için doğrultuda yapılan güvenilirlik analizinde çalışmanın güvenilirliği 0,90 olarak hesaplanmıştır. Bu prosedürün tamamı deneysel uygulama öncesi ve sonrası için toplanmış olan iki ayrı nitel veri seti için yapılmıştır. İki nitel veri setinde amaca uygun olarak bazı veriler rakamsallaştırarak betimsel farkları verilmiştir.

BULGULAR

Nitel Bulgular

Özel gereksinimli bireylere yönelik, duygu, düşünce ve davranışları incelemek üzere yapılan içerik analizi sonucunda aktivite öncesi ve sonrası olumlu tutumlar ve olumsuz tutumlar olmak üzere ikişer tema ortaya çıkmıştır. Bu temaların altında yer alan kategoriler (Şekil 2 ve 3) ve bulgular aşağıda yer almaktadır.



Şekil 2. Etkinlik öncesi nitel bulguların şeması

Tema A.Ö.1. Olumsuz Tutumlar

Olumsuz tutumlar teması katılımcıların aktivite öncesi engellilere bakış açısı konusunda yetersizlikleri, sorunları ve olumsuz inançları ortaya çıkarmaktadır. Bu tema altında bilişsel ve davranışsal yetersizlik, psikososyal sorunlar ve çarpık varsayımlar olmak üzere üç kategori ortaya çıkmıştır.

Kategori A.Ö.1.1. Bilişsel ve davranışsal yetersizlik

Bilişsel ve davranışsal yetersizlik kategorisinde katılımcıların yaptığı açıklamalar incelendiğinde aktiviteye katılım öncesinde engellilerin katıldıkları etkinlikler ile ilişkili olarak uygulama eksiklikleri, bilgi eksiklikleri ve ilgi eksiklikleri nedeniyle olumsuz olan tutumlar üzerine yoğunlaştığı görülmektedir. Bu kategoriye ait kodlar ve katılımcıların açıklamalarından alıntılar aşağıda yer almaktadır.

Tablo 1. Bilişsel ve davranışsal yetersizlik kategorisi kod ve katılımcı açıklama alıntıları

Kategori	Kod (f)
Bilişsel ve davranışsal yetersizlik	Uygulama eksikliği (72), Bilgi eksikliği (52), İlgi eksikliği (36),
<i>K12: Etkinliğe katılmadan önce engelliler ile ilgili çok bir bilgim yoktu. Giderken fazlasıyla endişeliydim çünkü daha önce bu tarz bir etkinlikte bulunmadım.....</i>	
<i>K232: Oturarak voleybol hakkında hiçbir şey duymamıştım. İlk kez sizden duymuştum.....</i>	
<i>K50: Etkinliğe gitmeden önce biraz endişeliydim çünkü çocuklarla birebir iletişim halinde olacaktık. Verecekleri tepki hakkında en ufak bir bilgim yoktu ve tahminde edemedim.....</i>	
<i>K262: Konuyla ilgili çok bir bilgiye sahip değildim. Etkinliğin nasıl olacağını merak ettim. Etkinlik öncesinde küçük bir araştırma yaptım.....Neler yapacağımıza dair fikirlerim oluştu. Ama o an ne yaşayabileceğimizle ilgili meraklarım oluştu.....</i>	
<i>K91: Goalball etkinliğinin öncesinde kafamdaki en büyük soru işaretlerinden biri gözlerim kapalı bir biçimde hiç aşına olmadığım bir spora adapte olup olmayacağım idi.....</i>	
<i>K70: 70. Otizm etkinliğine gitmeden önce otizmin ne olduğunu bilmiyordum. Meğer otizm bir farkındalıkmış. Ankara gölbaşına otizm için gittiğimizde kuruma ayak basarken bir şaşırmıştık.....</i>	
<i>K66: Otizm etkinliğinden önce gerçekten böyle otizmlı bireyler nasıl, onlar gündelik hayatında ne yapar, bizi gördüğünde davranışları nasıl, sevdiği insanlara karşı davranışları nasıl çok araştırmazdım.....</i>	

Kategori A.Ö. 1.2. Psikososyal Sorunlar

Psikososyal Sorunlar kategorisinde katılımcıların yaptığı açıklamalar incelendiğinde aktiviteye katılım öncesinde engellilerin goalball, oturarak voleybol, işitme engelli futbolu ve otizmlı bireylerle oyunlar ile ilişkili olarak iletişim problemleri, kaygı, stres, korku, yabancılık, duyarsızlık, empati eksikliği nedeniyle olumsuz olan tutumlar üzerine yoğunlaştığı görülmektedir. Bu kategoriye ait kodlar ve katılımcıların açıklamalarından alıntılar aşağıda yer almaktadır.

Tablo 2. Psikososyal Sorunlar kategorisi kod ve katılımcı açıklama alıntıları

Kategori	Kod (f)
Psikososyal Sorunlar	İletişim problemleri yaşayacağı düşüncesi (12), Korku (15), Kaygı/Stres (43), Yabancılık (15), Duyarsızlık (56), Empati eksikliği (122)
<i>K3: Özel gereksinimi bireylerle iletişim kurmanın zor olduğunu düşünüyorum ne konuştuğumuzu anlatmak istediğimizi anlamayacaklarını düşünüyorum...</i>	
<i>K174: Goalball etkinliği öncesi görme engelli insanların paralimpik sporu nasıl oynadığını, nasıl öteki kaleye kurallara uyarak görmeden attığını ve kendi aralarında neredeyse hiç konuşmadan sessizlikle nasıl anlaştıklarını çok merak ediyordum ve kendim bu sporu yapamayacağımı düşünüyordum.</i>	
<i>K121: Oturarak voleybol etkinliği öncesi çok basit olduğunu ve bu sporun zaten elle oynandığını söyleyerek rahat bir şekilde geldim. Mustafa hocam bize etkinlik öncesi izlettiği videoda da basit gözüküyordu....</i>	
<i>K12: Otizm ile ilgili çok bir bilgim yok. Giderken fazlasıyla endişeliydim çünkü daha önce bu tarz bir etkinlikte bulunmadım. İletişim konusunda problem yaşayacağımı, öğrencilerin yabancılık çekeceğini düşündüm.</i>	
<i>K242: o kadar da zor bir şey olmadığını düşünüyordum, çünkü görebildikleri için topu takip etmeleri kolaydı. Birbirlerini duymaları futbolda o kadar önemli değil. Yani sonuçta gördükleri bir şeydi.</i>	
<i>K260: Spor aktivitesi olduğu için kolay olacaktı.</i>	

Kategori A.Ö.1.3. Çarpık Varsayımlar

Çarpık Varsayımlar kategorisinde katılımcıların yaptığı açıklamalar incelendiğinde aktiviteye katılım öncesinde etkinlikler ile ilişkili olarak engelli bireyi, anormal görme, hasta görme, tehlikeli bulma, engelli bireyin etkinliği bozacağı/gerileteceği düşüncesi ve spor faaliyeti yapamayacağı düşüncesi nedeniyle olumsuz olan tutumlar üzerine yoğunlaştığı görülmektedir. Bu kategoriye ait kodlar ve katılımcıların açıklamalarından alıntılar aşağıda yer almaktadır.

Tablo 3. Çarpık varsayımlar kategorisi kod ve katılımcı açıklama alıntıları

Kategori	Kod (f)
Çarpık varsayımlar	Engelli bireyi anormal görme (6), Engelli bireyi hasta göreme (4), Engelli bireyi tehlikeli bulma (2), Engelli bireyin etkinliği bozacağı/gerileteceği düşüncesi (37), Engelli bireyin spor faaliyeti yapamayacağı düşüncesi (6),
<i>K14: Otizmlileri normal birey gibi görmemiştim aslında otizmlili bireyleri diğer hasta bireyler gibi düşünüyorum. Bir şey yaptırılmaktan korkuyordum. Zor olur diye düşündüm. Yanlış yapmaktan çekindim korktum. Mutlu olma duygusunu yaşayabilir miyim diye tereddütte kaldım.</i>	
<i>K18: Otizmlili bireyler hakkında düşündüğümde zor bireyler oldukları ve çok zorluk yaşayacağımızda. Ayrıca yapılacak olan etkinlikte bize katılmalarının bizi geriye götüreceğini düşünüyordum.</i>	
<i>K61: Otizmlili bireylerin daha tehlikeli olduklarını düşünürdüm. Onların spor alanında üstün başarı göstermelerinin zor olduğunu, farkındalıklarının gelişmediğini ve spor yapmayı sevmeyip spor alanında zorlandıklarını düşünüyordum. Yemek yerken hocalardan yardım aldıklarını ve zaman zaman huysuzluk yaptıklarını düşünüyordum. Kendilerini ifade etmekte zorlandıkları ve bu konuda ilerlemelerinin olanaksız olabileceğini düşünüyordum.</i>	
<i>K75: otizmlili bireylerin bir şey öğrenemeyeceğini, çevrelerine hasar vereceklerini, onlarla iletişim kurulamayacağını düşünüyorum.</i>	

Tema A.Ö.2. Olumlu Tutumlar

Olumlu tutumlar teması katılımcıların aktivite öncesi engellilerin katıldığı etkinlikler konusunda yeterlilikleri, becerileri ve olumlu inançları ortaya çıkarmaktadır. Bu tema altında bilişsel iyilik, duyuşsal iyilik ve tecrübe edinme olmak üzere üç kategori ortaya çıkmıştır.

Kategori A.Ö.2.1. Bilişsel İyilik

Bilişsel iyilik kategorisinde katılımcıların yaptığı açıklamalar incelendiğinde aktiviteye katılım öncesinde engellilerin katıldığı etkinlikler ile ilişkili olarak etkinliği önemli bulma ve farkındalık sahibi olunması sayesinde olumlu olan tutumlar üzerine yoğunlaştığı görülmektedir. Bu kategoriye ait kodlar ve katılımcıların açıklamalarından alıntılar aşağıda yer almaktadır.

Tablo 4. Bilişsel iyilik kategorisi kod ve katılımcı açıklama alıntıları

Kategori	Kod (f)
Bilişsel iyilik	Etkinliği önemli bulma (10), Farkındalık (14),
<i>K64: Otizm etkinliği öncesinde otizme sahip bireyleri tanıyacağım onlarla daha net bir şekilde empati kurabileceğim çok heyecanlı ve istekliyim. İnsanları anlamak benim için önemli bir meseledir ve ne kadar çok insanı anlayıp onlar ile empati kurabilirsem daha çok mutlu olurum.....</i>	
<i>K150: Etkinlik öncesi otizmlili bireyler hakkında araştırma yaparak, otizm ve spor dersindeki bilgilerimizle birleştirerek Otizm Vakfı müdürü Engin Bey Arslan hocamıza sorabileceğimiz soruları hazırlayarak gittim.....</i>	
<i>K189: Goalball etkinliğini sınıfta izlerken bu branşın zorluğunu ve hislere dayalı olduğunu anlamıştım. İnsanın kendisine bahsedilen görme yeteneğinden yoksun olarak bu oyunda rol alması aslında biraz kendini savunmasız hissettirebilir. Bu oyunun kendine has zorluğu olarak görebiliriz. Bu oyunda ülkemizin kazandığı başarıları da gördükten sonra ister istemez insan gururlanıyor ve bu branşların nasıl olur da ses getiremediğini düşünüyorum ülkemizde. Önem verilen branşlarda gelen başarısızlıklardan sonra böyle başarılı olduğumuz ve domine edebileceğimiz branşlardan gelen başarı ve gelirleri kullanmamız gerektiğini düşündüm.....</i>	
<i>K220: Daha önce sadece internette gördüğüm bu spor dalını çok etkileyici buldum çünkü doğuştan veya sonradan engelli olmuş olan bir bireyler hayatlarının bir dönemi kendilerini yoğun bunalımda hissedebilir ve bu tarz branşlar aslında onlar için bir çıkış kapısı oluyor ve kendilerine yetersiz hissetmek yerine aslında birçok şeyi başarabilecek duygusu yaşıyorlar ve bu etkinlik bana böyle düşündürdü. Aslında onların yerinde olsaydım kesinlikle bu spor branşını bir ümit ve kurtuluş olarak görürdüm.</i>	

Kategori A.Ö.2.2.Duyuşsal İyilik

Duyuşsal iyilik kategorisinde katılımcıların yaptığı açıklamalar incelendiğinde aktiviteye katılım öncesinde etkinlikler ile ilişkili olarak etkinliğe istek, merak, heyecan duyma, mutlu olma ve empati kurabilme sayesinde olumlu olan tutumlar üzerine yoğunlaştığı görülmektedir. Bu kategoriye ait kodlar ve katılımcıların açıklamalarından alıntılar aşağıda yer almaktadır.

Tablo 5. Duyuşsal iyilik kategorisi kod ve katılımcı açıklama alıntıları

Kategori	Kod (f)
Duyuşsal iyilik	İstek, merak, heyecan duyma (53), Mutlu olma (13), Empati kurma (29)
K49: Etkinliğe katılmadan önce hissettiğim derin duygular beni oldukça heyecanlandırdı. Çünkü sadece bir çocuğun bile olsa yaşadıklarını hissetmek, kısa bir sürede olsa kim olduğunu unutturmak, sanki otistik bir birey değilmiş gibi onunla oynamak ve bu çocukla bütünleşmenin çok yoğun duygular barındıracağını, bu organizasyona katılmaktan son derece keyif alacağımı önceden hissediyordum gibiydim. Etkinliğin detaylarına indikçe bunu bir sorumluluk ve görev olarak görüp bu deneyimi tatmanın eşsiz bir mutluluk getireceğine de inanmaya başlamıştım. Otizmle alakalı çok fazla bilgiye de sahip değildim. Bunu bir dezavantaj olarak görüp konuya tamamen hâkim olmanın gerektiğine inandım. Onlarla empati kurabilmek, hissettiklerini yaşayabilmek için buna bir ön hazırlık yapmalıyım fikrine kapıldım.	
K9: Heyecanlıydım ve oradaki çocuklara faydalı olup olamayacağım konusunda tedirgindim. Daha önce seyirci olarak otizmlilerle çocuklarla yapılan etkinliğe katılımım vardı ama hiç bizzat kendileriyle böyle etkileşimde olmamıştım.	
K107: Etkinlik öncesinde, değerli hocamızın bize izlettiği "paravolley" videolarından kaynaklı konuya bir ilğim oluşmuştu. Aslında bu etkinlikte olan insanların sahip olduğu engellerden çok yüzlerindeki mutluluk dikkatimi çekti. İnsanların ne engelleri olursa olsun bir şekilde mutluluğu bulabildiğini görebilmek beni de mutlu etti. Bu bana, engelli insanların da engelsiz yaşayabilmesini bir kez daha gösterdi. Ben bazen engelim olmamasına rağmen yerinden bile kalkamayan üçengeçken...	

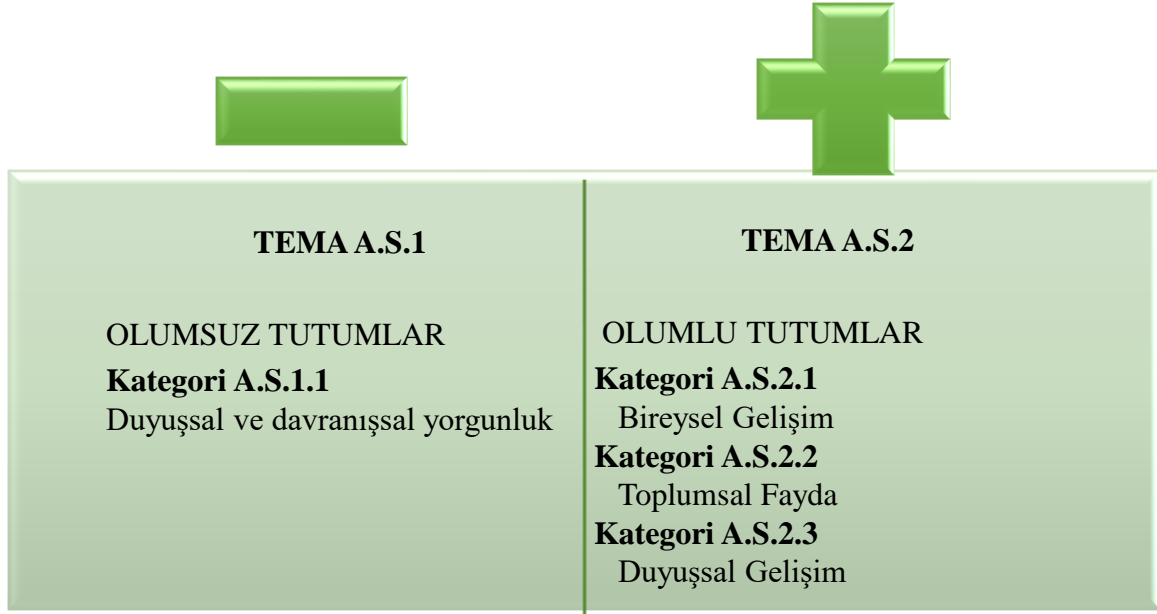
Kategori A.Ö.2.3.Tecrübe edinme

Tecrübe edinme kategorisinde katılımcıların yaptığı açıklamalar incelendiğinde aktiviteye katılım öncesinde etkinlikler ile ilişkili olarak yeni deneyimler elde etme ve deneyim artırabilme sayesinde olumlu olan tutumlar üzerine yoğunlaştığı görülmektedir. Bu kategoriye ait kodlar ve katılımcıların açıklamalarından alıntılar aşağıda yer almaktadır.

Tablo 6. Tecrübe edinme kategorisi kod ve katılımcı açıklama alıntıları

Kategori	Kod (f)
Tecrübe edinme	Deneyim artırma (14), Yeni deneyim (46),
K100: Daha önce otizm grubunu anlamaya ve idrak etmeye çalışmıştım. Goalball etkinliğinin daha öncesine kadar birlikte çalışma ya da gözlem fırsatı bulduğumuz tek engelli grubu otizmlilerden ibaretti. Bunu kesinlikle başta saygı ve devamında merakla karşılıyor olsam da şu ana kadar yapılan tek çalışmanın bu gruba olması neticesinde odağım tamamen otizmlilerle bireyler üzerindedir. Bu etkinliğe kadar görme engelli grubu düşünemediğim için kendime kızıyorum. Bu sebeptendir ki bu etkinlik benim ufkaımı açmış, gözlerimin önüne yeni birçok grup ve fikir getirmiştir.	
K102: Yeni bir etkinlik ve öğreneceğim yeni bilgiler ve tecrübeler için zamanımı ayırmaya gönüllü olan heyecanlı, mutlu ve umut dolu bir ben vardı etkinliğe gitmeden önce. Goalball her yıl turnuvası düzenlenen görme engelli bireyleri ile 3'e 3 şeklinde oynanan, içinde zil dolu, birazcık olsa da ağır bir topa sahip ve rakip kaleye gol atmaya çalıştığımız, oynaması ve izlemesi çok zevkli mutlak sessizlik talep eden bir oyunmuş.	

Aktivite Sonrası Bulgular



Şekil 3. Etkinlik sonrası nitel bulguların şeması

Tema A.S.1. Olumsuz Tutumlar

Olumsuz tutumlar teması katılımcıların aktivite sonrası etkinlikler konusunda duygusallaşma, üzülmeye, fiziksel ve psikolojik olarak zorlanma durumunu ortaya çıkarmaktadır. Bu tema altında duyuşsal ve davranışsal yorgunluk kategorisi bulunmaktadır.

Kategori A.S.1.1. Duyuşsal ve davranışsal yorgunluk

Duyuşsal ve davranışsal yorgunluk kategorisinde katılımcıların yaptığı açıklamalar incelendiğinde aktiviteye katılım sonrasında etkinlik ile ilişkili olarak duygusallaşma, üzülmeye, fiziksel ve psikolojik olarak etkinliği zor bulma nedeniyle olumsuz olan tutumlar üzerine yoğunlaştığı görülmektedir. Bu kategoriye ait kodlar ve katılımcıların açıklamalarından alıntılar aşağıda yer almaktadır.

Tablo 7. Duyuşsal ve davranışsal yorgunluk kategorisi kod ve katılımcı açıklama alıntıları

Kategori	Kod (f)
Duyuşsal ve davranışsal yorgunluk	Duygusallaşma ve üzülmeye (27), Fiziksel ve psikolojik olarak etkinliği zor bulma (25),
K100: Etkinlik bittiğinde görme duyusunun ne kadar önemli olduğunu ve bizim bunu kısa süre bile oyun amaçlı yaptığımız halde çok zor olduğunu anladım. Allah kimsenin başına vermesin....	
K103: Etkinlik sonrası herhangi bir pişmanlık yaşamadan katıldığım bu etkinlikte de yine hissettiklerim aldığım keyfin önüne geçti. Bir kez daha oyuna bağlılıktan çok, insanlığa hizmet etmenin verdiği duyguyu hemen hemen hiçbir şeyin vermeyeceğini çok çok iyi anlamış oldum...	
K9: Biraz duygusal anlamda beni etkiledi. Bu hususu hesaba katmamıştım. Benim de otizmlili bir erkek kardeşim var; çok zorlandığımız zamanlar da oluyor ama onda yalnızca söylediği bazı takıntılı şeyler ve gücünü fazla kullanmak gibi şeyler vardı. Bu durumun kişiye göre farklılaştığını yakından görmüş oldum....	
K18: Etkinlik sırasında çok zorlanmıştık çünkü bizimle beraber olan çocuğun içerisinde rekabet duygusu çok düşüktü oyun oynamada bu yüzden zorlanmıştık kızlara karşı olan ilgisi sürekli hayal dünyasına dalması vs bizi çok zorladı oradan çıktığımızda da kendimi çok aflagılamıştım bu yüzden.	

Tema A.S.2. Olumlu Tutumlar

Olumlu tutumlar teması katılımcıların aktivite öncesi etkinlik konusunda yeterlilikleri, becerileri ve olumlu inançları ortaya çıkarmaktadır. Bu tema altında bilişsel iyilik, duyuşsal iyilik ve tecrübe edinme olmak üzere üç kategori ortaya çıkmıştır.

Kategori A.S.2.1. Bireysel Gelişim

Bireysel gelişim kategorisinde katılımcıların yaptığı açıklamalar incelendiğinde aktiviteye katılım sonrasında etkinlik ile ilişkili olarak bilgi edinme, olumlu iletişim kurma, davranışları tahlil etme yeteneğinin artması, genişleyen vizyon, çözüm ve modifikasyon yeteneğinde artış, deneyim artırma ve kariyer aracı olarak görme sayesinde olumlu olan tutumlar üzerine yoğunlaştığı görülmektedir. Bu kategoriye ait kodlar ve katılımcıların açıklamalarından alıntılar aşağıda yer almaktadır.

Tablo 8. Bireysel Gelişim kategorisi kod ve katılımcı açıklama alıntıları

Kategori	Kod (f)
Bireysel Gelişim	Bilgi edinme, öğrenme (111), Olumlu iletişim kurma (23), Davranışları tahlil etme yeteneğinde artış (17), Genişleyen vizyon (19), Çözüm ve modifikasyon yeteneğinde artış (12), Deneyim artırma (5), Kariyer aracı olarak planlama (5) Farkındalık edinme (134)
<i>K1:</i> özel bireylerle nasıl iletişim kuracağım nasıl yaklaşacağım konusunda birçok fikir edindim	
<i>K20:</i> Öncelikle şunu belirtmek isterim ki bu etkinliğin yapılması beni çok mutlu etti. İlk başta otizmli arkadaşlarımız bizimle ufak bir uyum sorunu yaşamıştır. Bizde tam olarak nasıl davranacağımızı bilmediğimizden dolayı ilk başta bir alışma süreci oldu daha sonra voleybol oynamaya başladık onlara kazanma sevinci yaşattık sen yaparsın çok iyi gibi kelimelerle yanımızda daha mutlu hissetmelerini sağladık. Aslında çok yetenekli çocuklardı hatta bazı durumlarda bizim arkadaşlarımızdan daha becerikli oldukları noktalarda vardı. Onlara bu sevinci yaşatmak onlarla bu duyguyu yaşamak benim için çok güzel bir deneyimdi. Emeği geçen herkese teşekkür ediyorum.	
<i>K73:</i> Bu işin ve etkinliğin sayesinde otizmin sadece bir davranış bozukluğu olduğunu anladım. Etkinlikte Ataberk ve Atakan'ın sportif becerilerinin ne denli üst düzeyde olduğunu görüyoruz ve voleybol oynarken koordinasyon zekasını da takip edebildik. Yüksek ses tonunun onların cümleleri ayırt edebilmesine yardım ettiğini anladık. Adem ve İbrahim'in anlık gelen sinirleri ise onların bizle iletişim kurduğunu yani huzursuz durumda bize ilettiklerini gördük. Son olarak onların kimseye karşı kötülük beslemediğini ve anın tadını çıkardığını fark ettim.	
<i>K107:</i> Engelli bireyler için uyarlanmış bu branş bana, diğer branşların da buna benzer şekilde uyarlanarak, şartların sağlanarak tüm branşlara engelli bireylerin daha fazla katılım sağlaması gerektiğini düşündüm.	
<i>K148:</i> Etkinlik öncesinde merak ve heyecan duygum, etkinlik sonrasında farkındalığı artmış, empati kurma yeteneğim gelişmiş olarak iç huzura ve sevince dönüştü. Gönüllülük çerçevesinde eğitim hayatım boyunca katkı sağlamayı planladığım ve gerekli yetkinlikleri de kazandıktan sonra profesyonel olarak çalışmayı planladığım bir alan olarak görmekteyim. Terepatik rekreasyon konusundaki uzmanlaşma hedefimin çok yerinde bir başlangıçla bu vakıfla yürütebileceğimi düşünüyorum. Otizm vakfı fiziki olarak 3 villanın birleşimiyle, villalar arasındaki bağlantıları, kapalı ve açık spor tesisleriyle, öğrencilerine sunduğu çeşitli spor etkinlikleriyle (yüzme, masa tenisi, voleybol, bisiklet, fitness vs.) ve sanat meslek atölyeleriyle (ahşap boyama, çikolata yapımı, mutfak işleri, resim, müzik vs.) öğrencilerini hayata alıştırma konusunda profesyonel destek vermektedir. Bu bakımdan böyle merkezlerin yaygınlaştırılması konusunda gerekli çabayı göstermeyi istiyorum ve hedefliyorum.	
<i>K150:</i> Vakfa gittiğimde çoğu şey beklentimin üzerindeydi. Eğitimcilerin otizmli bireylere olan davranışları beni çok etkiledi. Bir gün ben de onlar kadar iyi olabilir miyim diye düşündüm ve bunu çok istedim. Vakıf beklediğimden çok daha güzeldi. Otizmli bireylerin gelişimlerini dinlemek, bireylerin çektiği zorlukları gözlerimle görmek bana birçok duyguyu birden hissettirdi. Otizmli bireylerin bu güzel ve anlamlı vakıf sayesinde yaşam kalitelerinin artmasını görmek beni daha çok iyi hissettirdi. Toplumsal farkındalığı arttırmak adına insanlara otizmi doğru bir biçimde anlatıp bu vakıfları görmelerini sağlamamız gerektiğini, maddi manevi destek oluşturmamız gerektiğini gidip gördükten sonra daha çok düşündüm. Bu önemli vakfa başta gönüllü olarak daha sonra da yeterli donanım olduğunda mesleki anlamda gümeyi çok isterim.	

Kategori A.S.2.2. Toplumsal fayda

Toplumsal fayda kategorisinde katılımcıların yaptığı açıklamalar incelendiğinde aktiviteye katılım sonrasında etkinlik ile ilişkili olarak ön yargıların yıkılarak engellilerin normal bireyler olduğunu düşünme, etkinliğin toplumsal ve bireysel faydasının farkında olma ve sporun bütünleştirici ve

iyileştirici yapısını anlama sayesinde olumlu olan tutumlar üzerine yoğunlaştığı görülmektedir. Bu kategoriye ait kodlar ve katılımcıların açıklamalarından alıntılar aşağıda yer almaktadır.

Tablo 9. Toplumsal fayda kategorisi kod ve katılımcı açıklama alıntıları

Kategori	Kod (f)
Toplumsal fayda	Ön yargıların yıkılarak engellilerin normal bireyler olduğunu düşünme (46), Etkinliğin toplumsal ve bireysel faydasının farkında olma (35), Sporun bütünleştirici ve iyileştirici yapısını anlama (9)
K59: Otizmlili bireylerin aslında hiç tehlikeli değil aslında bu düşünceye sahip olduğumuz için bizim daha tehlikeli olduğumuzu anladım. Otizmlili bireyler çok sepatik ve başarılılar. Spor alanına gelirsek, spor alanında çok çok yetenekliler ve inanılmaz başarılarına imza atacak kapasiteleri var. Bir sporu yaparken kendilerini tamamen o spora veriyorlar, ellerinden gelenin en iyisini yapmaya çalışıyorlar ve bu da ortaya çok başarılı çocuklar değil, çok başarılı sporcular çıkarıyor. Gözlemlediğim bir diğer olay seslere çok duyarlı olmaları ve bazı öğrencilerin yemek yerken biraz zorlanması ama eminim zaman içerisinde ve hocalarımızın büyük azim ve sabırlarıyla bunu aşacaklardır.	
K118: Bu etkinlik sonucunda sağlıklı bireyler için anlam, önem ve amacı ne ise engelli bireylerde de sporun önem, anlam ve amacı aynıdır. Engelli bireyler için sporun toplumsallaşma, hareket ihtiyacını karşılama, bireylere sağlıklı bir yaşam biçimi sağlama konusunda farkındalığını arttırdı. Engelli bireylerin spor yaparken kazandıkları özgüveni, paylaşma duygusunu, başkalarına bağlı olarak sürdürdükleri yaşam tarzını, toplumla bütünselleşme, fiziksel ve psikolojik açıdan kendilerini iyi hissetme, toplumun aslında ne kadar değerli bir parçası olduklarını hissedebilme konusunda yararlılık sağlar. Bu toplumumuzun gelişmesi açısından da önemli bir yere sahiptir. Toplumsal açıdan sporun ne kadar fiziksellik, güç, performans, dayanıklılık yönünde ilerlediği bilinse de engellilere özgü branşlarında gelişimine yönelik çalışmaların yapılması gerektiğini önemli kılar.	
K26: Aktivitelere katıldıktan sonra otizmlili bireylerin birçok sporla birlikte temel ve kaba motor becerilerinin çok iyi geliştiğini ve bireylerin topluma kazandırıldığına tanık oldum. Sporun bu kadar etkili olabileceğini bilmiyorken tam aksine gelişimde çok önemli rol oynadığına tanık olmak beni mutlu etti.	
K50: Etkinlik sonrasında, kendimden ettiğim şüphelerin yersiz olduğunu gördüğüm için içim rahatladı. Ayrıca onlarla oyun oynamanın hem bana hem de onlara iyi geldiğini, bir nebze dahi olsa mutlu edebildiğimi gördüm. Sporun iyileştirici etkisini bir kez daha gördüm.	

Kategori A.S.2.3.Duyuşsal Fayda

Duyuşsal fayda kategorisinde katılımcıların yaptığı açıklamalar incelendiğinde aktiviteye katılım sonrasında etkinlik ile ilişkili olarak eğlenme, mutlu olma, empati kurma, korku ve kaygıdan kurtulma, çevreye anlayışlı olma, duyarlı olma, şükretme, etkinliği kendi için terapi aracı olarak görme sayesinde olumlu olan tutumlar üzerine yoğunlaştığı görülmektedir. Bu kategoriye ait kodlar ve katılımcıların açıklamalarından alıntılar aşağıda yer almaktadır.

Tablo 10. Duyuşsal Fayda kategorisi kod ve katılımcı açıklama alıntıları

Kategori	Kod (f)
Duyuşsal Fayda	Eğlenme ve mutlu olma (73), Empati kurma (131), Korku ve kaygıdan kurtulma (5), Çevreye anlayışlı olma (6), Duyarlı olma (41), Şükretme (20), Etkinliği kendi için terapi aracı olarak göreme (9),
K31: Görme engelli insanların görme duyusu olmadan hayatlarını nasıl devam ettirdiklerini bir nevi yaşamış oldum. Goalboll oynarken gözlerimizin kapalı olması odan noktamızın sadece kulaklarımızda olduğunu fark ettim sadece sese dayalı bir şekilde topun nerden nasıl geldiğini duyup hissediyordum. Benim için çok eğlenceli ve güzel bir etkinlikti emeği geçen herkese teşekkür ediyorum.	
K122: Sonuç olarak bu etkinliklere katıldığım için çok mutluyum. Hocalarımıza çok teşekkür ederim. Çünkü bize bir şeyler eksik olsa dahi hayatın hala devam ettiğini ve insanların başarabildiklerini gösterdi. Bizim daha iyi anlamamızı, daha iyi empati kurduğumuzu öğretti. En önemlisi bize bu durumlara karşı nasıl daha çok farkındalık gösterdiğimizi öğretti. Bundan sonraki hayatımda başka durumlara karşı nasıl daha çok hassas davranılması gerektiğini biliyoruz teşekkür ederim.	
K54: Etkinliğin sonrasında içimi kaplayan eskiden tanıdığım duygularla karşılaşmanın benim açımdan büyük bir terapötik etkisi oldu. Bu gönüllü etkinliklerde yer almanın insana ne kadar iyi geldiğini tekrar hatırlamama olanak sağladı.	
K41: Onların dünyasından bakmayı öğrendim. Oyunla ilgili tecrübe edindim ve yaşadılarında nasıl zorluklarla karşılaşabileceklerinin farkına vardım. Böyle bit ortamda bulunduğumdan dolayı hem kendimi şanslı hissettim hem de mutlu oldum.	
K49: Etkinlik sonrası arzuladığım ve tamamen yaşamak istediğim her türden duyguyu tattım. Bu inanılmaz deneyim, yalnızca akademik olarak değil aynı zamanda insanıyet namına o kadar çok şey kattı ki kelimelerle tarif edilemeyecek kadar büyüktü. İlk defa otistik bir bireyle bu kadar yakından bir temas kurmuşum. Bana kattıklarıyla birlikte benim de ona katabileceklerim çok kritikti. Birlikte yaptığımız bu etkinlikte hayatta sahip olduğumuz her şeyin değerini bilmeyi ve ilgiye, sevgiye, saygıya, merhamete ihtiyacı olan bu çocuklara gereken özveriği gösterebilmeyi öğrendim. Çıktıktan sonra büyük bir gurur ve onur duydum. Bir yardıma muhtaç çocuğun da olsa yüreğine dokunabilmenin ne demek olduğunu hissettim. Teşekkür ederim.	

Nicel Bulgular

Engellilerin gözünden goalball, oturarak voleybol, işitme engelli futbolu ve otizmli bireylerle oyunlara yönelik etkinlik öncesi sonrası görüşleri incelemek üzere yapılan içerik analizi sonucunda aktivite öncesi ve sonrası olumlu tutumlar ve olumsuz tutumlar olmak üzere ikişer tema ortaya çıkmıştır. Bu temalara ait aktivite öncesi ve sonrası görüş sayıları ve yüzdeleri ile ilgili bulgular aşağıda yer almaktadır.

Tablo 11. Aktivite öncesi ve sonrası olumlu olumsuz tutumlara ait görüşlerin betimleyici istatistikleri

	A.Ö. (f)	A.Ö. (%)	A.S. (f)	A.S. (%)
Olumsuz Görüşler	420	70	52	7
Olumlu Görüşler	179	30	701	93
Toplam Görüş	599	100	753	100

Aktivite öncesi ve sonrası olumlu olumsuz tutumlara ait görüşlerin betimleyici istatistiklerine baktığımızda A.Ö. toplam görüş frekanslarının %70 olumsuz, %30 olumludur. A.S. toplam görüş frekanslarının ise %7 si olumsuz %93 olumludur. Bu sonuçlara göre yapılan etkinlik sonucunda etkinlikler ile ilgili olarak olumlu tutumların ciddi oranda arttığı bulunmuştur.

TARTIŞMA VE SONUÇ

Özel gereksinimli bireylerin gözünden goalball, oturarak voleybol, işitme engelli futbolu ve otizmli bireyler ile çeşitli etkinliklerin deneyimlenmesinin sağlanması amacıyla gerçekleştirilen araştırma bulguları etkinlikler öncesinde ve sonrasında olumlu ve olumsuz tutumlar olmak üzere çeşitli tutumlar geliştirdiği yönündedir. Etkinlik öncesi ve sonrası olumlu olumsuz tutumlara ait görüşlerin betimleyici istatistiklerine bakıldığında etkinlik öncesi toplam görüş frekanslarının %70 olumsuz, %30 olumludur. Etkinlik sonrası ise toplam görüş frekanslarının ise %7 si olumsuz %93 olumludur. Bu sonuçlara göre yapılan etkinlik sonucunda goalball, oturarak voleybol, işitme engelli futbolu ve otizmli bireyler ile çeşitli etkinlikler ile ilgili olarak olumlu tutumların ciddi oranda arttığı bulunmuştur. Özel gereksinimli olan ve olmayan öğrencilerin goalball etkinliklerine katılımının bireyleri olumlu yönde etkileyerek beceri, taktik ve oyun gelişimini teşvik edebileceğini belirten çalışmalar literatürde yerini almaktadır (Laughlin ve Happel, 2016). Aynı zamanda goalball faaliyetlerinin bireylerin motorik özellikleri ve vücut kitle indeksi gibi parametrelerinde olumlu değişim sağladığı çalışmalara rastlanmaktadır (Çalışkan vd., 2011; Lee vd., 2020; Miura vd., 2018).

Goalball, görme engelli ve görme engelli oyuncular için fiziksel uygunluğu, mekansal yönelimi ve ses lokalizasyonunu önemli ölçüde geliştirerek kişisel ve sosyal faydalar sunar (Krzak vd., 2015). Goalball eğitimi, fiziksel gelişimi etkili bir şekilde düzeltir ve görme engelli öğrencileri değişen yaşam koşullarına adapte ederek spor turnuvalarına katılımlarını teşvik eder (Kokhan ve Sereckin, 2022). Goalball, görme engelli sporculara yönelik, karmaşık koordinasyon

iletişimi yoluyla dikkatlerini tüm vücutlarına yaymalarını sağlayan eğitici bir oyundur (Gomes-da-Silva vd., 2015). Goalball oynamak, görme engelli çocuklarda, goalball oynamayanlara göre motor becerileri etkili bir şekilde geliştirir (Çolak vd., 2004). Özel gereksinimli ergen goalball oyuncularının, sedanter ergenlere göre daha yüksek fiziksel kondisyona sahip oldukları görülmüştür (Karakaya vd., 2009). Dolayısıyla özel gereksinimli bireylerin çeşitli düzeylerine olumlu katkı sağlayan ilgili süreçlerin yapılandırılması gerektiği değerlendirilmektedir. Bir diğer etkinlik olan oturarak voleybolda özel gereksinimli bireylerin olumlu kazanımlar elde ettiği literatürce desteklenmektedir. Buna göre çeşitli bulgular literatürde yerini almaktadır (Ahmadi vd., 2020; Molik vd., 2017; Sousa vd., 2020; Wiliński vd., 2022). Oturarak oynanan voleybol antrenmanı, özel gereksinimli bireyler için benzersiz ve etkili bir yöntem olup, uygulama ve araştırma yoluyla gelişimini ve yaygınlaşmasını teşvik etmektedir (Pai, 2003). Oturarak voleybol, motorik yetenekleri geliştirerek ve fizyolojik, psikolojik, sosyolojik ve motor yönlerde olumlu dönüşümleri teşvik ederek, fiziksel engelli kişilerin rehabilitasyonunu ve yeniden sosyalleşmesini olumlu yönde etkiler (Bratovčić vd., 2017).

Özel gereksinimli bireylere yönelik uyarlanmış fiziksel aktivite programı 6 haftalık antrenmanın ardından fiziksel parametrelerinde ve yaşam kalitelerinde iyileşme sağlandığını göstermiştir (Samsonienė ve Šverčiauskas, 2014). Voleybol, tüm yaş gruplarının erişebileceği, boş zaman, sağlık ve çalışma kapasitesinin yenilenmesini sağlayan bir kitle sporudur (Zubareva, 2019). Bu yönden bakıldığında oturarak voleybol gibi faaliyetlerin engellilerin sosyal katılımında ve fiziksel gelişiminde olumlu katkı sağlayacağı değerlendirilmektedir.

Sonuç olarak özel gereksinimli bireylerin yaşadığı deneyimleri onların gözünden değerlendirmek, benzer yaşantı hislerini tanımlamak bakımından önemli görülmektedir. Benzer uygulamaların genişletilerek yapılması önerilmektedir. Farklı katılımcıların özel gereksinimli bireylerin deneyimlerini paylaşmak adına farklı etkinlikleri onlar gibi deneyimlemesi, kendilerini onların yerine koyarak empati yapma süreçlerini olumlu etkileyecektir. Elde edilen bulgular etkinlik sonrası olumlu görüşlerin oldukça fazla artış gösterdiği yönündedir. Dolayısıyla farklı etkinlikler çerçevesinde akademi, yerel yönetimler ve merkezi yönetim iş birlikleriyle özel gereksinimli bireylerin gözünden çeşitli etkinlikleri deneyimleme şansı sunulmalıdır. Bu yolla bireylerin özel gereksinimli bireylere yönelik tutumlarında iyileşme olacağı elde edilen bulgu ile ortaya koyulmaktadır. Bu bağlamda farklı etkinlik çeşitleriyle akademik araştırmaların genişletilmesi önerilmektedir.

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Etik Kurul İzni ile ilgili Bilgiler

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Effects of Carbohydrate and Caffeine Mouth Rinsing Methods on Repetitive Kick Force and Duration, and Hand Reaction Time in Karate Athletes*

Burcu ÖZLÜKAN ŞAHİN^{1†}, Yasin YÜZBAŞIOĞLU¹, Gülbin RUDARLI¹

¹Ege University, Faculty of Sport Sciences, Izmir, Türkiye

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Abstract

The effect of carbohydrate (CHO) and caffeine (CAF) solutions rinsing in the mouth in combat sports where high-intensity movements are performed intermittently despite fatigue is unknown. This research was carried out to investigate the effects of rinsing CHO and CAF solutions in the mouth on kick force, duration, and hand reaction time in karate athletes. 16 male trained karate players (average age 21.6 years, weekly training time 8.4 hours, training experience 7.8 years) voluntarily participated in the study. In a replicated, double-blind, placebo-controlled, and crossover design study, after the 10 seconds mouth rinsing of CHO (6.4% maltodextrin), CAF (1.2%), and placebo (water) solutions in sessions, repeated sprint test (6sec sprint × 10 repetitions, with 30sec rest) on a bicycle ergometer, after light stimuli kick test (consecutive 5 times), hand reaction time test (consecutive 5 times), kick test (consecutive 5 times), hand reaction time test (consecutive 5 times) were performed respectively. The results obtained from the tests in the constructed protocol by causing fatigue (peak power, average power, minimum power, power drop; kicking reaction time, strength, power, and time; hand reaction time) were compared between sessions. The highest peak power and average power outputs (W/kg) obtained from the repeated sprint test were obtained in the CAF session, and the best kick and hand reaction times (ms) were obtained in the CAF session in the 2nd set of tests. The results obtained from this study suggest that the CAF mouth rinsing method can improve kick and hand reaction time despite fatigue in karate competitions.

Keywords: Kick power, Mouth wash, Power output, Reaction time

* This article is based on the doctoral thesis of the first author.

† **Corresponding Author:** Burcu Özlükan Şahin **E-posta:** brczlk24@gmail.com

INTRODUCTION

The oral cavity is sensitive to many tastes. Taste receptors in the mouth activate the nervous system at the peripheral level, which transmits signals to relevant areas of the cerebral cortex to produce an appropriate response. The mouth rinsing method is an ergogenic aid in sports, and it is defined as a method of circulating a liquid in the buccal cavity for a short time without swallowing and expelling it through spitting (Carter et al., 2004). The caffeine (CAF) or carbohydrate (CHO) rinsing method in the mouth has become increasingly popular in sports, as it is a method that avoids the side effects that may occur with the consumption of the supplements, as well as the positive effects observed on sports performance by rinsing the nutritional supplement in the mouth (Ehlert et al., 2020; Mark et al., 2019).

It has been reported that rinsing a liquid containing 6% CHO in the mouth can increase especially for about one-hour endurance performance by 2-3% (Carter et al., 2004; Chambers et al., 2009; Fares & Kayser, 2011; Lane et al., 2012; Pottier et al., 2010; Rollo et al., 2008). It has been observed that high-intensity interval exercises also have a significant effect, especially in the late stages of an exercise. Moreover, in addition to having some cognitive benefits, it also provides improvements in the rate of perceived exertion level (RPE) and motor skills during exercise (Anantaraman et al., 1995; Ball et al., 1995; Pomportes & Brisswalter, 2020). A 5-second CHO mouth rinse in cyclists was found to be more effective than a placebo on peak power and mean power output of the first sprint (+22.1 W and +39.1 W, respectively) in 5 x 6-second sprint performance (with 24 seconds of active recovery) (Beaven et al., 2013). Additionally, rinsing 25 ml of a solution containing 6% maltodextrin has significantly increased 5-second peak power output (+2.3%) during 30-second repetitive sprinting against resistance on a bicycle ergometer (Gant et al., 2010). Another study reported that 10 seconds of CHO mouth rinsing showed a smaller decrease in peak and mean torque of isometric maximal voluntary contraction during knee extension performed immediately after fatigue (Jensen et al., 2015). These findings have been explained by a mechanism by which oral CHO receptors activate the insular and motor cortices, stimulating neuromuscular pathways and improving performance (Chambers et al., 2009).

CAF is another substance believed to increase performance by rinsing the mixed solution in the mouth, activating taste receptors, and stimulating the central nervous system (Guest et al., 2021). Studies about CAF mouth rinsing to improve physical performance have been observed to show a mixed effect, and these results have been interpreted as being attributable to the studies' different methodological approaches (e.g., different CAF concentrations, exercise types, and nutritional status). Compared to the placebo solution, CAF mouth rinse failed the Wingate anaerobic sprint test (Karayiğit et al., 2017; Marinho et al., 2020) and on the Bench press movement at one repetition maximum (1RM) test or 60% of 1RM test until exhaustion (Clarke & Duncan, 2016). The Taekwondo Anaerobic Intermittent Kicking Test was applied to 27 Taekwondo athletes, and the percentage of successful kicks was found to be significantly higher with the CAF mouth rinse method compared to glucose and placebo conditions in the first three weeks of Ramadan (Pak et al., 2020). The effect of CAF mouth rinsing on cognitive performance appears to be particularly

positive compared to placebo, it leads to a reduction in mental fatigue (Van Cutsem et al., 2018) and reaction time (De Pauw et al., 2015) and an increase in cognitive control (Pomportes et al., 2017). CAF is believed to provide a performance-enhancing effect on the central nervous system by blocking adenosine receptors and increasing neural excitability (Walton et al., 2003). RPE and pain may be reduced in this way (Pataky et al., 2016). The second mechanism of action is the activation of bitter taste receptors in the mouth, which are directly connected to the brain regions involved in information processing and reward, by CAF (Gam et al., 2014).

In karate, kumite is a controlled encounter in which two opponents compete within certain rules, including punching, kicking, and dropping techniques. It has been reported that a karate competition lasts 2-4 minutes, where high-intensity movements are performed intermittently, anaerobic energy sources (ATP-PCr and anaerobic glycolysis) are mostly used in the movements and explosive force affects the techniques that determine the score (Glaister, 2005). Considering karate's characteristic features and competition environment, sudden attacks, techniques, and tactics are applied with endurance (Güzel et al., 2010). The reaction time must be short despite the fatigue caused by fast arm and leg technical combinations in dynamic combat.

Neuromuscular fatigue is defined as a decrease in strength or power resulting from any exercise or activity, regardless of the inability to sustain the assigned task (Boyas & Guevel, 2011). The most common type of sprint exercise used to examine neuromuscular fatigue is movements involving the legs (Gist et al., 2014), and repetitive sprints performed with leg movements in many studies are an adequate type of exercise to examine neuromuscular fatigue in the lower extremities (Duffield et al., 2009; Monks et al., 2017). Reaction time is the speed between giving a signal and initiating the movement consciously and depends on neurophysiological characteristics (Jain et al., 2015; Sperdin et al., 2009).

The number of studies showing the effects of CAF and CHO mouth rinsing methods on exercise performances is limited, and no study has been found showing the ergogenic impact of these methods on the force and duration of repetitive kicks in combat sports. The aim of this study, which was designed with the hypothesis that the CAF mouth rinsing method will be more effective on hand and kick reaction time than the CHO rinsing and placebo, is to investigate the effects of rinsing a solution containing CHO and CAF on the repetitive kick force, duration, and hand reaction time in karate athletes.

METHOD

Research Model

A repeated, double-blind, placebo-controlled, and crossover-designed laboratory study

Sampling

16 male karate athletes were trained in the Kumite (between the ages of 18-30, participating in training for at least 45 minutes at least four days a week, and at least five years of training experience). They participated in national and international competitions and did not have any injuries.

Exclusion criteria from the study were determined as follows:

1. Not being able to participate in all the tests to be carried out within the scope of the research.
2. Failure to comply with the necessary protocols for tests and measurements.
3. Getting ill or injured during research.

Data Collection Tools

In the familiarization session, the study design (Table 1) was introduced, and test trials were attempted for the participants to get used to the test equipment, environment, and researchers. The athletes' training levels and competition levels were obtained using the athlete information form, and information about their general health and injury status was obtained using the athlete health examination form.

The participants' height was measured with a height meter (Seca 769, Germany) with a sensitivity of 0.1 cm, with the head in the frontal axis and the overhead table touching the vertex point, feet bare, back, and attached to the height measurement rod. During the measurement, participants were asked to take a deep breath and hold it. Body mass was measured with a portable scale (Seca, Germany) with an accuracy of 0.1 kg, without shoes and wearing shorts and a T-shirt. Athletes were asked to stand in an upright position with their arms at their sides (anatomical stance), with both soles touching the ground.

In the test sessions, after the mouth rinsing application, the repetitive sprint test, repetitive kick force, duration test, kick reaction time test, and hand reaction time test were performed, respectively.

Participants were asked to come to the laboratory at least 48 hours apart for each session on the measurement day, to be rested, to have eaten at least 3 hours before, to have drunk an average of 500 ml of water, and to avoid alcohol, cigarettes, and caffeine consumption.

Table 1. Flow chart of the study design

Familiarization Session	Test Sessions
Familiarization with the tests	1. Resting heart rate (HR) and RPE
Height, body mass, body fat ratio measurement	Application of mouth rinse method
Athlete information form	2. HR and RPE
Athlete health examination form	Repetitive sprint test
Mouth rinsing practice	3. HR and RPE
	Repetitive kick force, duration, & kick reaction time tests
	Hand reaction time test
	4. HR and RPE
	Repetitive kick force, duration, & kick reaction time tests
	Hand reaction time test
	5. HR and RPE

Mouth Rinse application

Participants were asked to rinse 25 ml of various solutions in the mouth for 10 seconds in different sessions: CHO (6.4% maltodextrin solution), CAF (1.2% caffeine solution), and placebo (water). Non-caloric sweetener was added to all solutions administered to the participants to make them taste similar.

$25\text{ml water} \times 6.4\% \text{ CHO} = 1.6\text{gr powdered maltodextrin}$ and $25\text{ml water} \times 1.2\% \text{ CAF} = 0.3\text{gr}$ (300 mg) powdered CAF (equivalent to 1.5 capsule powder content) for each participant in each application. It was prepared in graduated tubes (Falkon Izolap Sterile Tube). The solution rinsed in the mouth was spit back into the graduated tube to check whether the solution was swallowed. Maltodextrin (TITO) is a food supplement product in powder form, it is a tasteless and easily digestible CHO, usually obtained from corn starch. It is used in many fast foods and in sports drinks, which are considered functional food products. Maltodextrin can also be obtained from potatoes, wheat, barley, rye, and oats.

CAF (Nature's Supreme) is a food supplement in capsule powder form. It has effects that stimulate the central nervous system and ensure alertness. It is considered normal for daily CAF intake to be 250-400 mg.

Sucralose-based table sweetener (Splenda Sweetener), one tablet is equivalent to 2 kcal of sugar (sucrose). It is widely used as a sugar substitute and does not contain aspartame and saccharin. It can be used in hot and cold drinks.

Repetitive sprint test

It was carried out by participants pedaling (sprinting) at the fastest speed of 10×6 seconds on a bicycle ergometer (Monark Ergomedic 894E, Monark, Sweden) at a load corresponding to 0.05 kg per body mass (kg). There was a 30-second interval between all out sprints, and these resting breaks were spent cycling at low speed. The average rpm reached in the repeated sprints performed in the sessions were for CAF: 149.5, CHO: 144.2, and PLA: 147.2. Verbal motivation was provided during sprints. With this test, peak power (PP: W and W/kg), average power (AP: W and W/kg), minimum power (MP: W and W/kg), and power drop (PD: %) were determined. The arithmetic means of the data obtained through sprints repeated ten times was taken. Before the test,

a standard warm-up protocol was applied, including pedaling on an ergometer for ~5 minutes at low tempo, ~1 minute at increasing speeds, and ~4 minutes of dynamic stretching for the lower extremities.

Kick force and duration test & Kick reaction time test

A free-standing kick-boxing stand (safeguard) was used as a target to obtain repetitive kick force and duration data, directly opposite the athlete, at a height of 170 cm from the ground and 200 cm away from the athlete. The camera was positioned in such a way that the full impact of the kick was visible on the boxing stand. Footage of the movement was recorded with a GoPro Hero 4+ Black camera (GoPro, Inc., San Mateo, CA, USA) 720p 240 fps full frame. The recorded kick images were analyzed with motion analysis (Kinovea 0.9.3) software (Picture 1).

For the kick reaction test, an electronic reaction measurement device was designed that gives an audible and light warning, consisting of a red LED light placed on the head of the kick-boxing stand, at the eye level of the participants, and two separate green and red buttons connected to the pressure sensor placed under the right feet of the participants. Participants positioned themselves so that their kicking feet were on the pressure sensor connected to the reaction device on the floor. After the system was started, they were asked to respond by kicking the red LED light that turned on at the end of a random period of 1-5 seconds after the audio stimulus was heard. The other foot of the participants was positioned in the suplex position in karate. The time between the red LED light turning on and the lifting of the right foot from the pressure sensor on the ground was considered as the kick reaction time. The time was recorded on the screen by the device. The practitioner manually pressed the start button from a place out of sight of the receiver athlete on the sensor, and an audible warning was given to them to wait in the ready position. The reaction device gives values of 1/1000 second (ms).



Picture 1. Repetitive kick force and duration test (Source: Captured by authors.)

To determine the validity and reliability of the kick reaction time test device, the suitability of the data for normal distribution was evaluated with the Kolmogorov-Smirnov test. The level of

correlation between the reaction times obtained from the created device and the camera was determined by Spearman's rank correlation coefficient test ($r=0.912$ and $p<0.000$). The coefficient of variation of the results obtained from the device was calculated with the formula $CV = \text{Standard deviation} / \text{mean} \times 100$ using Microsoft Excel software. Cronbach's alpha coefficient (0.927) was calculated for internal consistency. The validity (ICC: 0.912, CV: 7.4%) and reliability ($R^2 = 0.750$) of the device were found to be within accepted limits.

The repetitive kicking test was repeated after the hand reaction test. The arithmetic means of all data obtained from the measurements and calculations made for five kicks in each set was taken. For video recording of kicking movements, a camera recording at 240 frames/sec was selected, and the location and height of the camera were fixed. Lighting equipment was placed behind the video camera to illuminate the area where the movement took place. The sharpness adjustment and calibration of the video camera were made before the shooting. The calibration rod was positioned at a 90° angle to the area where the movement would be performed, and calibration images were recorded as 33 cm on the Kinovea program. The kicks (Mawashi back) that the participants applied to the marked kick point on the kick-boxing stand during the test were obtained in two-dimensional (2D) using this program, the spatial position data in cm of the points determined on each square image. The data obtained from the marked point in the study was filtered using the MATLAB (MathWorks, USA) program using a 3rd order low pass digital filter (Butterworth) with a cutoff frequency of 12 Hz. The average speed (m/s) and average acceleration (m/s^2) were obtained by taking the arithmetic means of the velocity (x, y) and acceleration (x, y) data in the 5-frame image backward from the impact point determined on Excel (Gordon et al., 2014). Calculation of participants' foot mass was obtained by multiplying body mass (kg) by the segmental (foot) mass ratio (0.0145) in the Dempster table (Dempster, 1955). The segmental foot mass and average velocity resultant were multiplied by the segmental foot mass and average acceleration resultant, and the resulting linear momentum and impact force were obtained. When calculating the kicking power, the average linear momentum was multiplied by the average speed (Gordon et al., 2014).

Hand reaction time test

Reaction Meter (Newtest 1000, Finland) was used to measure visual hand reaction time. The first part of the device is the device that gives the selected time and stimulus, and the second part is the warning sign that is placed on the table and helps the participant receive the stimulus. The device gives values of 1/1000 seconds. To determine the reaction time, participants sat on a chair with their hands on the table, palms facing the table, and were asked to respond to light stimuli given at unequal intervals by touching the button on the side of the device where the light was on. Light stimuli were given five times at different time intervals determined by the device, and the participants' response times to these stimuli were recorded in milliseconds. The hand reaction test was applied in two sets, immediately after the repeated kicking test. The arithmetic means of the five measurements in each set was taken.

Heart rate measurement

HR measurement was performed using the telemetric method (Polar RS 400, Polar Electro Oy, Kempele, Finland) after the participants rested in a sitting position for at least 10 minutes in the laboratory: rest (HR1), before (HR2) and immediately after the repetitive sprint test (HR3), immediately after the hand reaction test (HR4) and, immediately after the second set of the hand reaction test (HR5).

Determination of the rate of perceived exertion level

RPE was determined by the Borg scale (6-20) (Borg et al., 1987). Measurements were performed four times: before (RPE2) and immediately after the repetitive sprint test (RPE3), immediately after the hand reaction test (RPE4), and immediately after the second set of the hand reaction test (RPE5).

Ethical Approval

It was approved by the Ege University, Faculty of Medicine Clinical Research Ethics Committee (number: 19-9.1/47) that the research structure complied with the Declaration of Helsinki on Ethical Principles in Medical Research on Humans.

Analysis of Data

They were performed with the SPSS (version 25.0, SPSS Inc, Chicago, IL, USA) statistical package program. The suitability of the data for normal distribution was evaluated with the Shapiro-Wilk (W) test. Repeated Measures Analysis of Variance (ANOVA) was used to compare dependent variables, and the Bonferroni post hoc procedure was applied to analyze which group caused the difference. Data are expressed as means and standard deviations, with significance based on $p \leq 0.05$.

The sample size was calculated with G-power (version 3.1.9.2, Franz Faul, Universitat Kiel, Dusseldorf, Germany). In the power analysis, the sample size was calculated to be at least 15 to determine a small effect size ($f = 0.3$) for repeated measures ANOVA with $\alpha = 0.05$ and $1-\beta$ margin of error of 0.75.

FINDINGS

The mean age of the participants was $M = 21.6$, $SD = 3.39$ years (range: 19-30 years), the mean height was $M = 179.1$, $SD = 8.14$ cm (range: 168-196 cm), and the body mass was $M = 77.9$, $SD = 16.4$ kg (range: 57-112 kg) and their weekly training duration was $M = 8.4$, $SD = 1.12$ hours (range: 6-12 hours) and their sports experience was $M = 7.8$, $SD = 4$ years (range: 5-20 years).

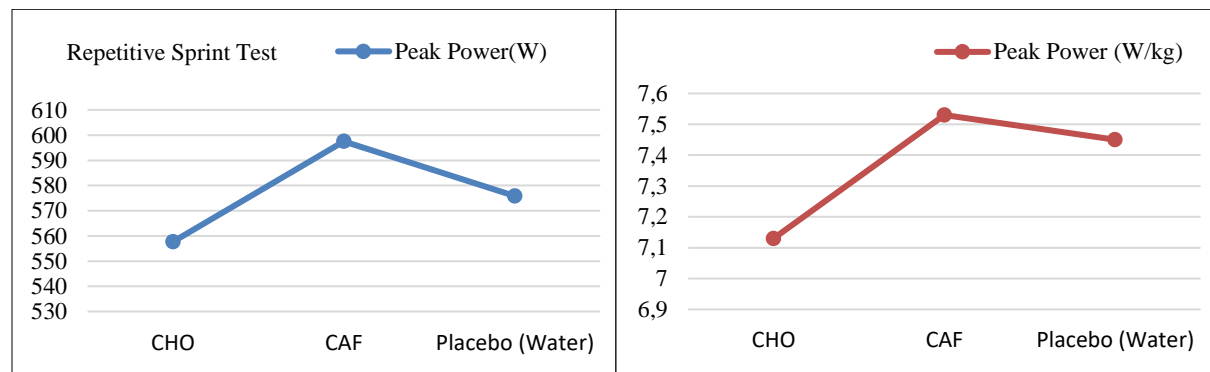
There was a significant difference between the sessions in the PP output W/kg body weight ($p = 0.015$) from the repetitive sprint test measured. The differences between CHO and CAF sessions ($p = 0.006$) and between CHO and placebo sessions ($p = 0.030$) were significant (Table 2). The

change of data according to sessions is given in Graph 1. Accordingly, the best PP was achieved in the CAF mouth rinse session, while the worst result was seen in the CHO mouth rinse session.

Table 2. Comparison of peak power (W and W/kg) output obtained in the repeated sprint test between sessions

Sessions	Peak power (W)			Peak power (W/kg)		
	X	$\pm S$	p = 0.078	X	$\pm S$	p = 0.015
1 CHO	557.7	135.2	1<2 (p = 0.046)	7.13	1.01	1<2 (p = 0.006)
2 CAF	597.5	120.7	1<3 (p = 0.041)	7.53	0.88	1<3 (p = 0.030)
3 Placebo (water)	575.8	113.1	2>3 (p = 0.253)	7.45	0.84	2>3 (p = 0.611)

Carbohydrate (CHO), Caffeine (CAF)



Graph 1. Change of peak power (W and W/kg) output obtained in the repetitive sprint test according to sessions

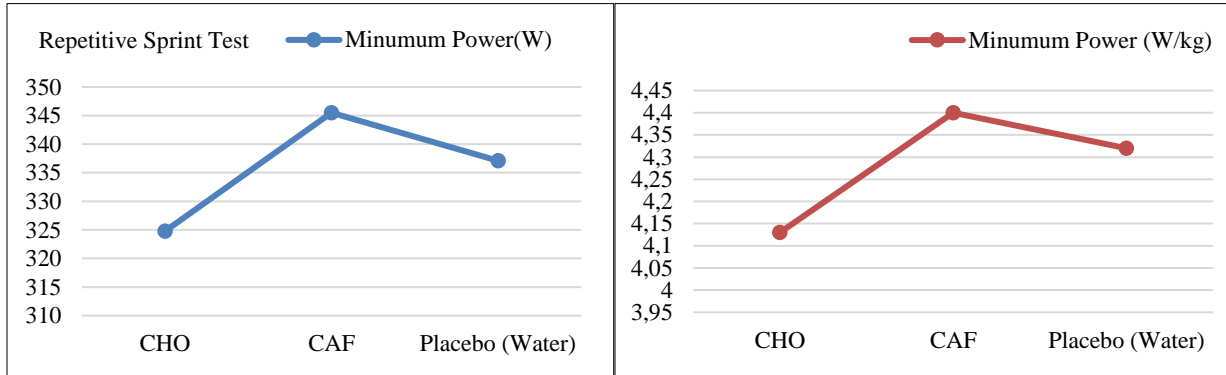
There was a significant difference between the sessions in AP W/kg body weight (p = 0.039). The differences between CHO and CAF sessions (p = 0.017) and between CHO and placebo sessions (p = 0.048) were significant (Table 3). Accordingly, the best AP output was achieved in the CAF mouth rinse session, while the worst result was seen in the CHO session.

Table 3. Comparison of average power (W and W/kg) data obtained in the repeated sprint test between sessions

Sessions	Average power (W)			Average power (W/kg)		
	X	$\pm S$	p = 0.139	X	$\pm S$	p = 0.039
1 CHO	437.9	121.4	1>2 (p = 0.073)	5.60	0.81	1<2 (p = 0.017)
2 CAF	467.0	103.6	1>3 (p = 0.064)	5.90	0.72	1<3 (p = 0.048)
3 Placebo (water)	452.1	103.5	2>3 (p = 0.378)	5.81	0.70	2>3 (p = 0.637)

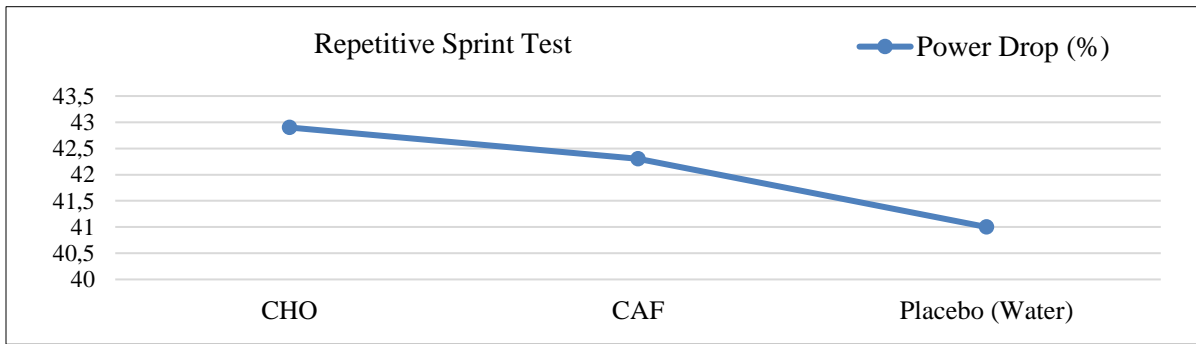
Carbohydrate (CHO), Caffeine (CAF)

There was no significant difference between the sessions for MP (W and W/kg body weight) ($p > 0.05$) (Graph 2).



Graph 2. Change of minimum power (W and W/kg) data obtained in the repetitive sprint test according to sessions

There was no significant difference between the sessions for PD (%) ($p > 0.05$) (Graph 3).



Graph 3. Change of PD (%) data obtained in the repetitive sprint test according to sessions

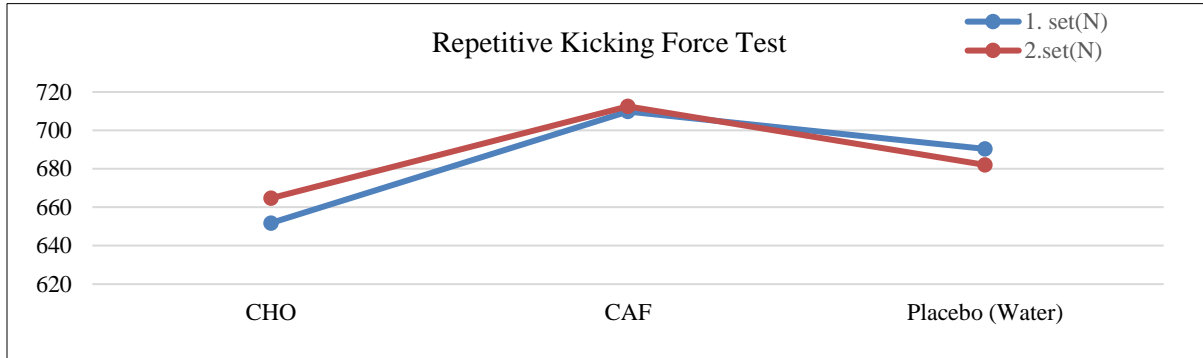
There was a significant difference between the sets of the sessions in the kick reaction time (ms) ($p = 0.041$). The difference between CHO and CAF sessions was significant ($p = 0.041$) (Table 4). Accordingly, the best time was achieved in the CAF mouth rinse session, while the worst result was seen in the CHO session.

Table 4. Comparison of the mean data (ms) obtained from the kicking reaction time test between sessions

Kicking reaction time test (ms)						
Sessions	1. set			2. set		
	X	± S	p = 0.102	X	± S	p = 0.041
1 CHO	473.2	75.8	1 > 2 (p = 0.940)	458.7	49.5	1 < 2 (p = 0.041)
2 CAF	475.1	76.5	1 < 3 (p = 0.005)	422.0	67.4	1 > 3 (p = 0.066)
3 Placebo (water)	435.4	63.4	2 < 3 (p = 0.043)	429.6	55.5	2 > 3 (p = 0.948)

Carbohydrate (CHO), Caffeine (CAF)

There was no significant difference in the average force (N) of the repetitive kicking test, which was repeated twice in each session, between sessions ($p > 0.05$) (Graph 4).



Graph 4. Change in the average force (Newton) obtained in the repetitive kicking test between sessions

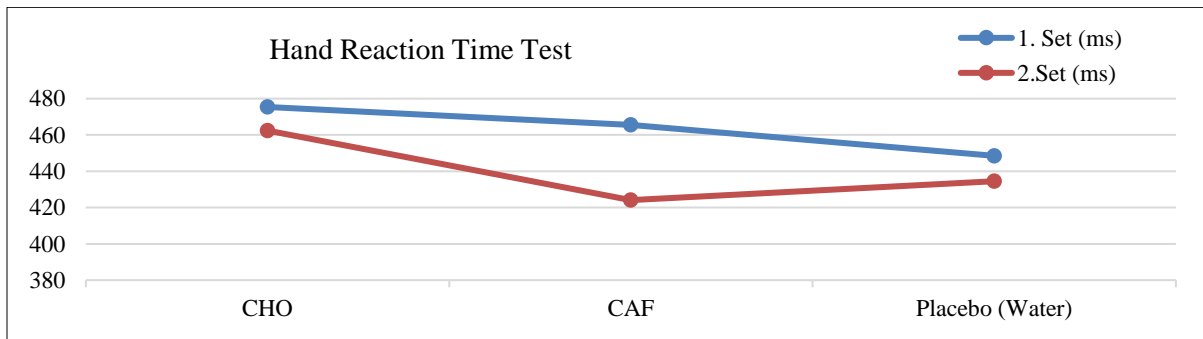
There was no significant difference in the average power (W) calculated from the repetitive kicking test and average kicking times (ms), which was repeated twice in each session, between sessions ($p > 0.05$).

There was a significant difference between the sets of the sessions in the hand reaction time (ms) in favor of the 2nd set ($p = 0.038$). The differences between CHO and CAF sessions ($p = 0.016$) and between CHO and placebo sessions were significant ($p = 0.006$) (Table 5). Accordingly, the best time was achieved in the CAF mouth rinse session, while the worst result was seen in the CHO session (Graph 5).

Table 5. Comparison of average time (ms) obtained in the hand reaction time test between sessions

Hand reaction time test (ms)							
		1. set			2. set		
Sessions	X	$\pm S$	$p = 0.379$	X	$\pm S$	$p = 0.038$	
1 CHO	475.4	58.8	$1 > 2$ ($p = 0.667$)	462.4	42.0	$1 < 2$ ($p = 0.016$)	
2 CAF	465.6	80.5	$1 > 3$ ($p = 0.088$)	424.1	45.3	$1 < 3$ ($p = 0.006$)	
3 Placebo (water)	448.5	55.0	$2 > 3$ ($p = 0.399$)	434.5	43.9	$2 > 3$ ($p = 0.538$)	

Carbohydrate (CHO), Caffeine (CAF)



Graph 5. Change in the average data (ms) obtained in the hand reaction time test between sessions

No significant difference was found between sessions in the HR ($p=0.607$) and RPE ($p=0.329$) values.

DISCUSSION AND CONCLUSION

The main finding of the study, in which the effect of mouth rinsing of solutions containing CHO and CAF on the repetitive kick force, duration, and hand reaction time tests after the repetitive sprint protocol in karate athletes was investigated, was that the CHO and CAF mouth rinse applications had no significantly different effect on the repetitive kick force, duration, and hand reaction tests after fatigue than placebo application. However, significant positive effects were detected in the PP and AP obtained from the repeated sprint test and in the second sets of the kick and hand reaction test in the CAF mouth rinse sessions. Additionally, there was no significant difference between sessions in the HR and RPE values measured in each session.

It has been shown that CAF consumption improves performance by increasing attention and alertness in tasks involving psychomotor functions such as reaction time, agility, and decision-making accuracy (Da Silva et al., 2021). Reaction time, which is an important determinant of performance in combat sports, was tested on five consecutive kicks (Bandal Tchagui) in taekwondo athletes after consuming $5 \text{ mg} \cdot \text{kg}^{-1}$ CAF, just before and after two fights performed 20 minutes apart and compared with placebo application. In conclusion, CAF consumption was found to delay fatigue during consecutive taekwondo fights and improve reaction time only in conditions in which fatigue does not occur (Santos et al., 2014).

In addition to the positive performance effects obtained with CHO and CAF consumption, it has been reported that CHO and CAF mouth rinse methods have the potential to activate the prefrontal cortex (orbitofrontal and dorsolateral) associated with cognition, attention, and reward, which can play a central role in the motor control process and improve exercise performance (Ehlert et al., 2020; Pomportes et al., 2020), reduces mental fatigue (Van Cutsem et al., 2018), improves information processing in terms of both speed and accuracy and increases reaction time (De Pauw et al., 2015; Pomportes & Brisswalter, 2020) and delaying fatigue (Jeffers et al., 2015), formed the basis of the hypothesis of this study. In addition, it has made the effects of this nutrition strategy on karate athletes more curious in combat sports, because this method can offer athletes the opportunity to mouth rinse during combat sets without hindering their performances and losing to an opponent despite cognitive weakening and physical decline during fatigue in such sports (Decimoni et al., 2018; Pomportes et al., 2017).

Five-second mouth CHO rinses improved peak power output (2.3%) during a 30-second sprint (Phillips et al., 2014) and power output and muscle strength (2%) increased significantly immediately after mouth CHO rinse application (Gant et al., 2010), it has been shown that 10 seconds of CHO mouth rinsing reduces the decrease in peak and mean torque of isometric maximal voluntary contraction during knee extension immediately after fatigue (Jensen et al., 2015). However, some studies did not find any evidence of a beneficial effect on 6×40 -meter running

sprint performance with 5 minutes of rest (Bortolotti et al., 2013), maximal sprint, and maximum power performance (Clarke et al., 2015; Chong et al., 2011; Painelli et al., 2011), the repeated bench press test (Green et al., 2022), repeated jump, sprint, and strength performances (Dorling & Earnest, 2013) after CHO mouth rinsing. 10-second CHO mouth rinse solutions (6%, 12%, and 18%) did not affect upper body muscle strength or muscle endurance in female athletes (Karayığit et al., 2021), and on reaction time and accuracy measures after a single 20-second CHO mouth rinse (De Pauw et al., 2015)

The fact that CAF mouth rinsing is an effective alternative method for improving exercise performance is based on two potential mechanisms. First, CAF binds to adenosine receptors in the mouth and increases the release of neurotransmitters and motor unit firing rates. Secondly, bitter taste receptors in the oral cavity, which are directly connected to the brain regions responsible for information processing and reward, are activated when exposed to CAF and increase mental alertness through dopamine transmission (Gam et al., 2014; Pickering, 2019).

CAF mouth rinse increased brain activity in areas associated with attention control (De Pauw et al., 2015), and mean power in the first and second sprints was compared with placebo in the protocol 5×6 s maximum sprints with 24 seconds rest (Beaven et al., 2013), improved sprint cycling performance in low muscle glycogen with 10 seconds of CAF (2%) mouth rinsing (Kizzi et al., 2016), successful kick performance compared to glucose and placebo during a taekwondo test performed in a fasted state (Pak et al., 2020), and 3 km cycling performance in subjects who exercised only in the morning compared to exercise performance in the afternoon (Pataky et al., 2016). On the other hand, it has been reported that CAF mouth rinse has not improved running performance in Yo-Yo Level 1 test (Dolan et al., 2017) and 1RM strength performance (Clarke et al., 2015), Wingate anaerobic power test (Marinho et al., 2020) and repetitive jumping test (Karuk et al., 2022).

One of the most common and consistent cognitive effects of caffeine is shortening reaction time (Deslandes et al., 2004; Lieberman et al., 1987; McLellan et al., 2016; Santos et al., 2014; Saville et al., 2018; Torres & Kim, 2019). CAF mouth rinse method resulted in a reduction in mental fatigue (Van Cutsem et al., 2018), improvement in reaction time (De Pauw et al., 2015), and an increase in cognitive control (Pomportes et al., 2017) compared to placebo.

Fatigue is defined as a decrease in physical performance associated with exercise or strain during an activity (John, 1995). The main cause of fatigue during maximum resistance exercise is related to decreased neural stimulation (Walker et al., 2012). It was shown that CAF mouth rinse delayed the time to fatigue (Kasper et al., 2016), and increased fatigue tolerance with increased RPE and decreased electromyographic activity (Melo et al., 2021).

Although there were no significant differences in HR and RPE between sessions in our study, CHO mouth rinsing in women has been shown to reduce RPE compared to placebo during repetitive resistance exercise (Decimoni et al., 2018), a result interpreted to suggest that CHO mouth rinsing may reduce fatigue-related declines in motor function by activating new signaling

pathways (De Pauw et al., 2015; Pomportes & Brisswalter, 2020; Van Cutsem et al., 2018). Studies have also found that CHO mouth rinsing can significantly increase neuromuscular performance during an isokinetic fatiguing task and improve sprint power output with similar or higher HR and RPE values (Bazzucchi et al., 2017; Pataky et al., 2016).

The main limitations of the study are that the participants could not be kept under continuous surveillance during the test period and that the number of participants could not be increased. It was assumed that the participants were not affected by circadian rhythm changes by being tested at the same time of day, that they did not use any ergogenic support that could affect the test results, that they did not change their diet during the test period, that they entered the tests sufficiently rested, that they entered the test sessions 3 hours after their last meal, and that they filled out the forms with real information. The results obtained from this study, CAF mouth rinsing had significant effects on the PP and AP achieved in the repetitive sprint test and the second set of the kick and hand reaction tests, showed that the CAF mouth rinsing method can improve kicking and hand reaction times in karate competitions where high-intensity movements are performed intermittently. In future studies, the effects of single or multiple uses of the caffeine mouth rinsing method can be evaluated during official or friendly competitions.

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Authors' Contribution: Study Design-BÖŞ, YY, and GR, Data Collection-BÖŞ and YY, Statistical Analysis-GR, Manuscript Preparation-BÖŞ and GR. All authors read and approved the final manuscript.

Ethical Approval

Ethics Committee: Ege University, Faculty of Medicine Clinical Research Ethics Committee

Date/Protocol number: 19-9.1/47

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The Effect of Service Quality in Sports Businesses on Customer Satisfaction*

Ali Gürel GÖKSEL^{1†}, Mürüvvet ÇOBAN², Aygün AKGÜL³

¹Mugla Sıtkı Koçman University, Faculty of Sport Sciences, Mugla, Türkiye

²Mugla Sıtkı Koçman University, Institute of Social Sciences, Mugla, Türkiye

³Mugla Sıtkı Koçman University, Institute of Health Sciences, Mugla, Türkiye

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Abstract

Sports businesses need to improve their service quality to achieve their goals continuously. Enterprises that can achieve this will have a positive effect on customer satisfaction and will be able to sustain their existence and allow their businesses to grow. The problem statement of the research is "Is there a relationship between perceived service quality and customer satisfaction in sports businesses?". In this direction, the research aims to examine the relationship between service quality and customer satisfaction in enterprises in terms of different demographic variables. The population of the study consisted of 885 members who receive active service in Mugla Culture Art Sports Center and Trade LLC sports enterprises. The sample consisted of 375 people over the age of 18, 123 of whom were female and 252 of whom were male. To collect the data needed for the research, the personal information form prepared by the researchers, the Sports Facilities Customer Satisfaction Scale (SFCSS) developed by Yıldırım (2017), and the Fitness Centers Service Quality Scale (FCSQS) developed by Sevilmiş (2019) was used. The data were collected a face-to-face questionnaire technique. SPSS 26.0 package program was used to analyze the collected data. Frequency and percentage analyses were used to determine the demographic structure of the data. A T-test was used to investigate the relationship between two independent variables and a one-way analysis of variance (ANOVA) was used to examine the relationship between three or more variables. Statistical analyses were interpreted based on a $p < 0.05$ significance level. The results of the analyses showed that the Cronbach Alpha values of the scales and sub-dimensions were highly reliable. The findings revealed a strong and positive relationship between service quality and customer satisfaction ($r=0.613$, $p<0.01$). This means that customer satisfaction increases with the increase in service quality in sports facilities.

Keywords: Sports businesses, Service quality, Customer satisfaction

Spor İşletmelerindeki Hizmet Kalitesinin Müşteri Memnuniyetine Etkisi

Öz

Spor işletmelerinin hedeflerine ulaşabilmeleri için hizmet kalitelerini sürekli geliştirmeleri gerekmektedir. Bunu başarabilen işletmeler müşteri memnuniyetine olumlu yönde etki ederek hem varlıklarını sürdürebilecek hem de işletmelerinin büyümesine olanak tanıyacaktır. Araştırmanın problem cümlesi "spor işletmelerinde algılanan hizmet kalitesi ile müşteri memnuniyeti arasında bir ilişki var mıdır?" şeklindedir. Bu doğrultuda araştırmanın amacı, işletmelerdeki hizmet kalitesi ile müşteri memnuniyeti arasındaki ilişkinin farklı demografik değişkenler açısından incelenmesidir. Araştırmanın evrenini Muğla Kültür Sanat Spor Merkezi ve Ticaret LTD. ŞTİ spor işletmesinde aktif hizmet alan 885 üye oluşturmuştur. Örneklemi ise 18 yaşından büyük 123'ü kadın ve 252'si erkek toplamda 375 kişi oluşturmuştur. Araştırmanın ihtiyaç duyduğu verileri toplayabilmek için araştırmacılar tarafından hazırlanan kişisel bilgi formu, Yıldırım (2017) tarafından geliştirilen Spor Tesisleri Müşteri Memnuniyeti Ölçeği (STMMÖ) ve Sevilmiş (2019) tarafından geliştirilen Fitness Merkezleri Hizmet Kalitesi Ölçeği (FMKHÖ) kullanılmıştır. Veriler yüz yüze anket tekniğiyle toplanmıştır. Toplanan verilerin analizlerini gerçekleştirebilmek için SPSS 26.0 paket programı kullanılmıştır. Verilerin demografik yapısını tespit etmek için frekans ve yüzde analizleri kullanılmıştır. İki bağımsız değişken arasındaki ilişkiyi analiz etmek için t-testi, üç veya daha fazla değişkenin ilişkilerini incelemek için ise tek yönlü varyans analizi (ANOVA) yapılmıştır. İstatistiksel değerlendirmelerde $p < 0.05$ anlamlılık düzeyi temel alınarak yorumlar yapılmıştır. Analiz sonuçları, ölçeklerin ve alt boyutlarının Cronbach Alpha değerlerinin yüksek güvenilirlikte olduğunu göstermiştir. Bulgular, hizmet kalitesi ile müşteri memnuniyeti arasında güçlü ve olumlu bir ilişki olduğunu ortaya koymuştur ($r=0,613$, $p<0,01$). Bu sonuçlar, spor tesislerindeki hizmet kalitesinin artmasıyla müşteri memnuniyetinin de arttığını ifade etmektedir.

Anahtar kelimeler: Spor işletmeleri, Hizmet kalitesi, Müşteri memnuniyeti

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† **Corresponding Author:** Ali Gürel GÖKSEL, **E-mail:** aligoksel@mu.edu.tr

INTRODUCTION

Sports and health facilities operate as customer-oriented institutions (Howat et al., 2013; McDonald & Howland, 1998). In this environment of intense competition, great importance should be given to service quality to attract customers and ensure loyalty (Cristea & Mocuta, 2018). Proper evaluation of service quality in sports enterprises plays a vital role in fully meeting customer expectations and ensuring the business's long-term success (Grönroos, 1984). In the global competitive age, organizations must focus on improving service quality to enhance their performance. Additionally, providing a sustainable competitive advantage and meeting customer needs effectively should be the primary goals for the survival of the organization (Cristea & Mocuta, 2018; Demirbag et al., 2006; Imran et al., 2018; Jong et al., 2019; Sinha et al., 2016).

The interaction between customers' expectations and the provided service is critical in determining service quality (Parasuraman et al., 1985). Service quality is defined as an attitude resulting from comparing customers' expectations with the business's actual performance, which is associated with satisfaction but not entirely equivalent to it (Bolton & Drew, 1991; Parasuraman et al., 1988). According to Kasiri et al. (2017), service quality is defined as the difference between customers' expectations and the service received, and it is considered one of the main determinants of customer satisfaction. The concept of service quality is closely linked to customer satisfaction and is seen as a precursor to it (Grönroos, 1982; Parasuraman et al., 1985). Service quality is one of the main elements that shape customers' interactions with the business and determine their overall satisfaction levels (Alnawas & Hemsley-Brown, 2019; Deng et al., 2013; Hao et al., 2015; Nunkoo et al., 2017; Oh & Kim, 2017; Ren et al., 2015).

Satisfaction is defined as a positive state that arises when consumers' expectations are met (Peter & Olson, 2010). According to Oliver (1980), customer satisfaction measures the consistency or inconsistency between expectations before purchasing a service or product and evaluations after purchasing it. Another definition describes customer satisfaction as the feeling of contentment consumers have with the products they purchase (Gülbaşı, 2022). In this context, the relationship between the quality of services provided in sports enterprises and customer satisfaction is a significant area of research in both theoretical models and applied studies (Alexandris et al., 2004; Chelladurai & Chang, 2000; Deng et al., 2013; Francesco & Roberta, 2019; Göksel & Ekici, 2013; Mathe et al., 2016; Rahimi & Kozak, 2017).

The concept of service quality is closely related to customer satisfaction (Grönroos, 1982; Parasuraman et al., 1985). Funk et al., (2022) stated that these two concepts are interdependent and emphasized that quality is a precursor to customer satisfaction. Therefore, customers cognitively evaluate service performance in the short term and this ultimately affects their overall service experience (Torres, 2014). Research shows that each of the dimensions of service quality in sports organizations such as physical facilities, staff attitude and competence, reliability, and timeliness have different effects on customer satisfaction (Álvarez-García et al., 2019; Tufantoz & Yıldız,

2022; Yoshida & James, 2011). In addition, it should not be forgotten that communication is an important tool for solving problems that may arise (Akgül & Mutlu, 2021). Therefore, it is extremely important to pay attention to, control and improve the quality of these dimensions, opportunities and tools.

The quality of services offered in sports organizations directly affects customer satisfaction and thus plays a decisive role in the sustainability and competitiveness of the organizations (Huang & Kim, 2023). Many studies in the literature have concluded that perceived service quality has a significant positive effect on customer satisfaction (Ali & Raza, 2017; Brady et al., 2001; Cronin et al., 2000; Nunkoo et al., 2017; Wu, 2014). Abror et al., (2019) emphasize that the extent to which service quality is in line with customer needs and expectations is a determining factor in customer satisfaction. This study shows that customer satisfaction increases with the increase in the harmony provided in service delivery. In addition, Bakar et al., (2012) states that customer satisfaction passes through service quality. In addition to these studies, some studies conclude that the perception of service quality in customers makes a significant difference in customer satisfaction levels (Álvarez-García et al, 2019; Kouthouris & Alexandris, 2005; Kyle et al., 2010; Lentell, 2000; Murray & Howat, 2002; Parasuraman et al., 1988; Shonk & Chelladurai, 2008; Shonk & Chelladurai, 2009; Swan & Bowers, 1998; Taylor & Baker, 1994; Theodorakis et al., 2001).

While sports organizations aim to increase customer satisfaction with the quality of the services they offer, they also endeavor to survive in a competitive market. Service quality is a critical factor that directly affects customers' loyalty to the business and the rate of repeat preference and is supported by the literature (Anderson & Mittal, 2000; Brocato et al., 2012; Heinonen & Strandvik, 2015; Novokreshchenova et al., 2016; Schneider et al., 2005). In this context, examining whether the service quality to be provided affects customer satisfaction is of great importance both in the academic field and in practical applications. Determining the factors affecting customer satisfaction and improving these factors play a key role in ensuring the long-term success and sustainability of sports enterprises. Considering this information, the problem statement of the research is “Is there a relationship between service quality and customer satisfaction levels offered in sports enterprises?”. The study aims to examine the relationship between the quality of services offered in sports enterprises and customer satisfaction through different variables.

METHOD

Research Model

In the study titled "The Effect of Service Quality in Sports Enterprises on Customer Satisfaction", a survey technique was used. In addition, a relational survey model was used in the study. In the research carried out according to this model, the existing situations are tried to be defined as they are, without any intervention to the person, situation, case, event, or object being examined (Karasar, 2016). In the research, it is aimed to "examine the relationship between service quality perceptions and customer satisfaction" of consumers who purchase services from sports enterprises.

Participants

This study preferred the convenience sampling method. This choice was made to simply reach the mass needed in the study and to provide flexibility in the sample selection process (Baştürk & Taştepe, 2013). Mugla Culture Art Sports Center and Trade LLC, which operates in the center of Mugla province, has 885 members who actively receive service in the sports enterprises. While determining the sample of the study, it was aimed to reach 268 people with a 95% confidence level and 5% sampling error. This sample size was found acceptable in terms of statistical reliability. Individuals who participated voluntarily were over the age of 18. The total number of participants was 375. Of these, 123 were female and 252 were male. The voluntary participation of the participants contributed to the study being more resistant and reliable against external influences. As a result, the voluntary participants selected with the easily accessible sampling method represent the general findings of the study. The results obtained are limited to the member population of the relevant sports organization.

Table 1. Information on the demographic characteristics of the participants

Variables		N	%
Gender	Male	252	67,2
	Female	123	32,8
Marital Status	Married	90	24,0
	Single	285	76,0
Age	18-24 Years	165	44,0
	25-34 Years	114	30,4
	35-44 Years	66	17,6
	45 Years and Over	30	8,0
Educational Background	Primary and Secondary	18	4,8
	High School	174	46,4
	Associate Degree	78	20,8
	Bachelor's Degree	87	23,2
	Graduate Degree	18	4,8
Duration of Regular Sports Practising	Less than 1 Year	186	49,6
	1-3 Years	75	20,0
	More than 3 Years	114	30,4
Frequency of Coming to the Sports Center	1-2 per week	36	9,6
	3-4 per week	198	52,8
	5-6 per week	141	37,6
Total		375	100

Table 1 presents information on the demographic characteristics of the participants such as gender, marital status, age, educational status, duration of regular sports practice, and frequency of visiting

the sports center. It was determined that 67.2% of the participants were male (n=252) and 32.8% were female (n=123). When the marital status of the participants was analysed, it was found that 90 of them were married (24.0%) and 285 of them were single (76.0%). It was found that 44% of the participants were 18-24 years old (n=165), 30.4% were 25-34 years old (n=114), 17.6% were 35-44 years old (n=66) and 8.0% were 45 years old and above. According to the answers given to the educational status question, it is seen that the group with the highest average is high school graduates (n=174) with an average of 46.4%. In addition, 18 (4,8%) primary and secondary school graduates, 78 (20,8%) associate degree graduates, 87 (23,2%) undergraduate graduates, and 18 (4,8%) postgraduate graduates were found. In terms of the duration of doing sports regularly, it is understood that most of the participants (49.6%) have been doing sports for less than 1 year and those who have been doing sports for more than 3 years have a rate of 30.4%. Regarding the frequency of weekly visits to the sports center, it is observed that most of the participants come to the sports center 3-4 times a week (52.8%), followed by 5-6 times a week (37.6%).

Data Collection Tools

The questionnaire used in this study consists of three parts. In the first part, there are six questions to determine the demographic characteristics of the participants: gender, marital status, age, education level, duration of regular exercise, and frequency of visiting the fitness center. In the second part, the Fitness Centers Service Quality Scale (FCSQS) developed by Sevilmiş (2019) was used to measure the service quality perceptions of the participants. This scale is a five-level Likert-type scale consisting of 30 items and has five different dimensions: contract, trainer interest, physical evidence, cleaning, and interaction. The Cronbach's Alpha reliability coefficient of the FCSQS was calculated as 0.70. In the third part, the Sports Facilities Customer Satisfaction Scale (SFCSS) developed by Yıldırım (2017) was used to evaluate customer satisfaction levels. This scale consists of 32 items and has eight different dimensions: coach approach, support staff approach, personal and social development, hygiene, canteen services, program support, atmosphere, and suitability/comfort. The reliability coefficients of the sub-dimensions ranged from 0.63 to 0.90 and the Cronbach Alpha reliability coefficient of the total scale was determined as 0.90.

Ethical Approval

Ethical approval of the study was obtained from Mugla Sıtkı Kocman University Social and Human Sciences Research Ethics Committee on 09.12.2022 with protocol number 220196 and decision number 171.

Data Collection

Both the ethics committee permission required for the study and the necessary permissions were obtained from the researchers who developed the scales to be used. In the data collection process, a face-to-face questionnaire form was applied to 375 members who received services at Mugla Culture, Arts and Sports Center and voluntarily participated in the study. These survey data were evaluated, and the results obtained were analyzed.

Analysis of Data

Since the skewness and kurtosis coefficients of the data were between -2 and +2, it was determined that the data exhibited a normal distribution (George & Mallery, 2010). Based on this result, parametric tests were applied. In the data analysis performed using SPSS 26.0 software, frequency and percentage analyses were performed to determine the demographic characteristics of the data collected by face-to-face questionnaires, t-test to evaluate the relationship between two independent variables, and one-way analysis of variance (ANOVA) to examine the relationship between three or more variables. According to the ANOVA results, Tukey HSD multiple comparison test was used to determine between which groups there were statistically significant differences. Pearson correlation test was performed to evaluate the relationship between service quality, the independent variable of the study, and customer satisfaction, the dependent variable. Statistical analyses and interpretations of the data were based on $p < 0.05$ significance level. As a result of the analyses, Cronbach Alpha reliability coefficients of the scales and sub-dimensions were found to be robust.

FINDINGS

Statistical analyses of the data collected in line with the determined methods and objectives of this study were made and the results obtained were given in tables.

Table 2. Mean values of SFCSS and FSQS

	N	Min.	Max.	\bar{X}	S	Skewness	Kurtosis	α
SFCSS	375	1,50	3,00	2,696	0,249	-1,568	1,234	0,896
Coach Approach	375	1,00	3,00	2,836	0,316	-1,781	1,710	0,879
Support Staff Approach	375	1,00	3,00	2,872	0,339	-1,623	1,861	0,918
Personal and Social Development	375	1,75	3,00	2,718	0,331	-,753	-,759	0,700
Hygiene	375	1,00	3,00	2,452	0,472	-,380	-,690	0,759
Canteen Services	375	1,00	3,00	2,612	0,407	-1,175	1,193	0,643
Programme Support	375	1,00	3,00	2,741	0,463	-1,276	1,812	0,827
Atmosphere	375	1,25	3,00	2,532	0,400	-,572	-,196	0,559
Suitability/Comfort	375	1,50	3,00	2,736	0,389	-,1365	1,089	0,312
FCSQS	375	2,07	5,00	4,122	0,617	-,811	,853	0,936
Contract	375	1,00	5,00	3,949	1,018	-,726	-,310	0,912
Trainer Interest	375	1,00	5,00	4,012	0,900	-1,192	1,605	0,917
Physical Evidence	375	1,57	5,00	4,097	0,795	-,911	,373	0,880
Cleaning	375	1,17	5,00	4,089	0,724	-,819	1,384	0,840
Interaction	375	3,00	5,00	4,668	0,517	-1,728	1,559	0,787

SFCSS=Sports Facilities Customer Satisfaction Scale; FSQS=Fitness Centers Service Quality Scale; \bar{X} =Average; S=Standard Deviation; α =Cronbach Alpha

Table 2 presents the mean values and other statistical measures for the Sports Facility Customer Satisfaction Scale (SFCSS) and Fitness Center Service Quality Scale (FCSQS). In the study in which the SFCSS scale was evaluated with a total of 375 participants, the mean SFCSS score was found to be 2.696, with a standard deviation of 0.249. Similarly, the mean score of the FCSQS was 4.122, with a standard deviation of 0.617. Cronbach Alpha coefficients show that both scales have adequate internal consistency ($\alpha=0.896$ for SFCSS and $\alpha=0.936$ for FCSQS). The mean scores for the Coach Approach, Support Personnel Approach, and Programme Support sub-dimensions were

found to be 2.836, 2.872, and 2.741, respectively. The internal consistency for each of these sub-dimensions is at a sufficient level ($\alpha=0.879$, $\alpha=0.918$, and $\alpha=0.827$, respectively). On the other hand, the mean scores for Personal and Social Development, Hygiene, Canteen Services, Atmosphere, and Appropriateness/Comfort are 2.718, 2.452, 2.612, 2.532 and 2.736, respectively. The internal consistency level varies among these sub-dimensions ($\alpha=0.700$, $\alpha=0.759$, $\alpha=0.643$, $\alpha=0.559$ and $\alpha=0.312$, respectively). Finally, the mean scores for the sub-dimensions of Contract, Coach Interest, Physical Evidence, Cleanliness, and Interaction were determined as 3.949, 4.012, 4.097, 4.089 and 4.668, respectively. The internal consistency level for these sub-dimensions was also high ($\alpha=0.912$, $\alpha=0.917$, $\alpha=0.880$, $\alpha=0.840$ and $\alpha=0.787$, respectively). These findings presented in Table 2 show that customer satisfaction and service quality in sports facilities are at different levels in different sub-dimensions and the internal consistency of these measures is generally acceptable.

Table 3. T-test result for gender variable

	Gender	N	\bar{X}	S	t	p
SFCSS	Male	252	2,691	0,260	-,353	,725
	Female	123	2,708	0,229		
Coach Approach	Male	252	2,841	0,335	,265	,791
	Female	123	2,825	0,275		
Support Staff Approach	Male	252	2,842	0,381	-1,667	,098
	Female	123	2,932	0,223		
Personal and Social Development	Male	252	2,750	0,329	1,554	,123
	Female	123	2,652	0,330		
Hygiene	Male	252	2,452	0,488	,013	,990
	Female	123	2,451	0,444		
Canteen Services	Male	252	2,610	0,416	-,074	,941
	Female	123	2,615	0,391		
Programme Support	Male	252	2,742	0,486	,025	,980
	Female	123	2,739	0,418		
Atmosphere	Male	252	2,503	0,390	-1,162	,248
	Female	123	2,591	0,417		
Suitability/Comfort	Male	252	2,684	0,401	-2,266	,026*
	Female	123	2,841	0,343		
FCSQS	Male	252	4,107	0,635	-,374	,709
	Female	123	4,152	0,583		
Contract	Male	252	3,865	1,087	-1,445	,152
	Female	123	4,122	0,847		
Trainer Interest	Male	252	4,025	0,928	,229	,819
	Female	123	3,986	0,850		
Physical Evidence	Male	252	4,039	0,820	-1,169	,245
	Female	123	4,216	0,737		
Cleaning	Male	252	4,142	0,721	1,184	,239
	Female	123	3,979	0,728		
Interaction	Male	252	4,684	0,480	,509	,611
	Female	123	4,634	0,591		

*p<,05

When the results of the t-test conducted according to the gender variable in Table 3 were analyzed, a statistically significant difference was found in the Appropriateness/Comfortability sub-dimension of the SFCSS ($p=0.026$). According to this finding, it was determined that women (mean=2.841) obtained higher scores than men (mean=2.684). No statistically significant

difference was found in the overall and other sub-dimensions of the SFCSS. Similarly, no statistically significant difference was observed in the overall and sub-dimensions of the FCSQS.

Table 4. T-test result for marital status variable

	Marital Status	N	\bar{X}	S	t	p
SFCSS	Married	90	2,677	0,235	-,493	,623
	Single	285	2,703	0,254		
Coach Approach	Married	90	2,828	0,325	-,158	,874
	Single	285	2,839	0,314		
Support Staff Approach	Married	90	2,900	0,305	,516	,607
	Single	285	2,863	0,351		
Personal and Social Development	Married	90	2,641	0,369	-1,341	,187
	Single	285	2,742	0,316		
Hygiene	Married	90	2,316	0,414	-1,966	,054
	Single	285	2,494	0,483		
Canteen Services	Married	90	2,608	0,386	-,056	,955
	Single	285	2,613	0,415		
Programme Support	Married	90	2,777	0,422	,493	,623
	Single	285	2,729	0,477		
Atmosphere	Married	90	2,500	0,307	-,591	,556
	Single	285	2,542	0,426		
Suitability/Comfort	Married	90	2,833	0,330	1,580	,117
	Single	285	2,705	0,402		
FCSQS	Married	90	4,114	0,609	-,081	,936
	Single	285	4,124	0,622		
Contract	Married	90	4,011	0,903	,380	,705
	Single	285	3,929	1,056		
Trainer Interest	Married	90	3,900	0,862	-,784	,434
	Single	285	4,048	0,913		
Physical Evidence	Married	90	4,300	0,644	1,613	,109
	Single	285	4,033	0,829		
Cleaning	Married	90	3,855	0,819	-2,053	,042*
	Single	285	4,163	0,680		
Interaction	Married	90	4,708	0,561	,488	,626
	Single	285	4,655	0,505		

*p<,05

Table 4 shows the t-test results for the marital status variable. The results show that there is no statistically significant difference in the overall and sub-dimensions of SFCSS. In addition, while there was no significant difference in the overall FCSQS, a significant difference was observed in the Cleanliness sub-dimension (p=0,042). According to this finding, it was determined that married individuals (\bar{x} =3,855) had a lower satisfaction level than single individuals (\bar{x} =4,163) in the Cleanliness dimension.

Table 5. ANOVA results according to age variable

	Age	N	\bar{X}	S	F	p	Post-Hoc
SFCSS	18-24	165	2,744	0,240	1,426	,239	
	25-34	114	2,666	0,292			
	35-44	66	2,670	0,175			
	45 and +	30	2,603	0,243			
Coach Approach	18-24	165	2,851	0,259	,373	,773	
	25-34	114	2,827	0,387			
	35-44	66	2,857	0,271			
	45 and +	30	2,742	0,414			
Support Staff Approach	18-24	165	2,877	0,254	,727	,538	
	25-34	114	2,835	0,476			
	35-44	66	2,954	0,166			
	45 and +	30	2,800	0,421			
Personal and Social Development	18-24	165	2,822	0,257	4,001	,009*	18-24 > 45 and +
	25-34	114	2,644	0,375			
	35-44	66	2,670	0,356			
	45 and +	30	2,525	0,321			
Hygiene	18-24	165	2,609	0,490	3,896	,011*	18-24 > 45 and +
	25-34	114	2,342	0,504			
	35-44	66	2,318	0,337			
	45 and +	30	2,300	0,229			
Canteen Services	18-24	165	2,627	0,443	,604	,614	
	25-34	114	2,638	0,417			
	35-44	66	2,602	0,342			
	45 and +	30	2,450	0,283			
Programme Support	18-24	165	2,793	0,408	1,422	,240	
	25-34	114	2,771	0,395			
	35-44	66	2,560	0,669			
	45 and +	30	2,733	0,409			
Atmosphere	18-24	165	2,590	0,433	,712	,547	
	25-34	114	2,486	0,414			
	35-44	66	2,477	0,317			
	45 and +	30	2,500	0,311			
Suitability/Comfort	18-24	165	2,690	0,402	,879	,454	
	25-34	114	2,723	0,414			
	35-44	66	2,840	0,323			
	45 and +	30	2,800	0,349			
FCSQS	18-24	165	4,155	0,685	,172	,915	
	25-34	114	4,106	0,588			
	35-44	66	4,050	0,601			
	45 and +	30	4,163	0,368			
Contract	18-24	165	3,945	0,977	,406	,749	
	25-34	114	3,903	1,107			
	35-44	66	3,886	1,029			
	45 and +	30	4,283	0,955			
Trainer Interest	18-24	165	4,135	0,969	,753	,523	
	25-34	114	3,973	0,768			
	35-44	66	3,811	1,009			
	45 and +	30	3,928	0,716			
Physical Evidence	18-24	165	4,085	0,886	,099	,960	
	25-34	114	4,078	0,704			
	35-44	66	4,097	0,829			
	45 and +	30	4,228	0,572			
Cleaning	18-24	165	4,160	0,776	1,184	,319	
	25-34	114	4,157	0,745			
	35-44	66	3,916	0,652			
	45 and +	30	3,816	0,372			
Interaction	18-24	165	4,618	0,566	1,258	,292	
	25-34	114	4,611	0,562			
	35-44	66	4,829	0,321			
	45 and +	30	4,800	0,329			

*p<,05

Table 5 presents the ANOVA analyses for the age variable. No significant difference was found in the overall SFCSS and FCSQS. However, when the sub-dimensions of SFCSS were analyzed, statistically significant differences were found in Personal and Social Development ($p=0.009$) and Hygiene ($p=0.011$) sub-dimensions. The findings show that participants aged between 18-24 years show a higher level of satisfaction in both sub-dimensions than participants aged 45 years and over.

Table 6. ANOVA results according to education level variable

	Education	N	\bar{X}	S	F	p
SFCSS	Primary and Secondary	18	2,645	0,286	,127	,972
	High School	174	2,694	0,273		
	Associate Degree	78	2,721	0,233		
	Bachelor's Degree	87	2,690	0,224		
	Graduate Degree	18	2,697	0,224		
Coach Approach	Primary and Secondary	18	2,666	0,466	1,048	,386
	High School	174	2,805	0,361		
	Associate Degree	78	2,873	0,262		
	Bachelor's Degree	87	2,871	0,245		
	Graduate Degree	18	2,976	0,058		
Support Staff Approach	Primary and Secondary	18	2,833	0,408	,122	,974
	High School	174	2,887	0,328		
	Associate Degree	78	2,865	0,293		
	Bachelor's Degree	87	2,844	0,424		
	Graduate Degree	18	2,916	0,129		
Personal and Social Development	Primary and Secondary	18	2,583	0,376	,585	,674
	High School	174	2,711	0,337		
	Associate Degree	78	2,778	0,318		
	Bachelor's Degree	87	2,724	0,308		
	Graduate Degree	18	2,625	0,440		
Hygiene	Primary and Secondary	18	2,583	0,341	,367	,831
	High School	174	2,478	0,452		
	Associate Degree	78	2,461	0,541		
	Bachelor's Degree	87	2,379	0,470		
	Graduate Degree	18	2,375	0,564		
Canteen Services	Primary and Secondary	18	2,541	0,332	,929	,450
	High School	174	2,650	0,405		
	Associate Degree	78	2,673	0,322		
	Bachelor's Degree	87	2,534	0,466		
	Graduate Degree	18	2,416	0,516		
Programme Support	Primary and Secondary	18	2,333	0,666	1,492	,209
	High School	174	2,747	0,455		
	Associate Degree	78	2,717	0,601		
	Bachelor's Degree	87	2,804	0,274		
	Graduate Degree	18	2,888	0,172		
Atmosphere	Primary and Secondary	18	2,833	0,204	,976	,423
	High School	174	2,517	0,396		
	Associate Degree	78	2,548	0,412		
	Bachelor's Degree	87	2,500	0,383		
	Graduate Degree	18	2,458	0,579		
Suitability/Comfort	Primary and Secondary	18	2,750	0,418	,889	,473
	High School	174	2,672	0,444		
	Associate Degree	78	2,750	0,324		
	Bachelor's Degree	87	2,827	0,306		
	Graduate Degree	18	2,833	0,408		

Table 6 (Continue). ANOVA results according to education level variable

	Education	N	\bar{X}	S	F	p
FCSQS	Primary and Secondary	18	3,961	0,512	,397	,811
	High School	174	4,135	0,632		
	Associate Degree	78	4,210	0,647		
	Bachelor's Degree	87	4,035	0,633		
	Graduate Degree	18	4,194	0,400		
Contract	Primary and Secondary	18	4,138	1,351	,616	,652
	High School	174	4,054	0,849		
	Associate Degree	78	3,929	1,065		
	Bachelor's Degree	87	3,706	1,224		
	Graduate Degree	18	4,000	1,032		
Trainer Interest	Primary and Secondary	18	3,428	1,495	,808	,522
	High School	174	4,000	0,895		
	Associate Degree	78	4,126	0,906		
	Bachelor's Degree	87	4,014	0,840		
	Graduate Degree	18	4,214	0,358		
Physical Evidence	Primary and Secondary	18	4,166	0,602	,382	,821
	High School	174	4,078	0,802		
	Associate Degree	78	4,241	0,826		
	Bachelor's Degree	87	4,034	0,840		
	Graduate Degree	18	3,881	0,641		
Cleaning	Primary and Secondary	18	3,611	1,009	1,210	,310
	High School	174	4,126	0,729		
	Associate Degree	78	4,205	0,631		
	Bachelor's Degree	87	3,965	0,733		
	Graduate Degree	18	4,305	0,661		
Interaction	Primary and Secondary	18	4,791	0,332	,523	,719
	High School	174	4,607	0,607		
	Associate Degree	78	4,730	0,380		
	Bachelor's Degree	87	4,672	0,486		
	Graduate Degree	18	4,833	0,408		

p>,05

In Table 6, the results of the ANOVA test conducted in line with the answers given by the participants to the education status variable are presented. According to the findings obtained, no statistically significant difference was found both in the overall and sub-dimensions of the SFCSS and in the overall and sub-dimensions of the FCSQS.

Table 7. ANOVA results according to the variable of doing regular sports

	Duration	N	\bar{X}	S	F	p	Post-Hoc
SFCSS	Less than 1 Year	186	2,571	0,214	4,161	,018*	3 Years + > Less than 1 Year
	1-3 Years	75	2,722	0,314			
	More than 3 Years	114	2,731	0,236			
Coach Approach	Less than 1 Year	186	2,794	0,256	,278	,758	
	1-3 Years	75	2,845	0,455			
	More than 3 Years	114	2,849	0,300			
Support Staff Approach	Less than 1 Year	186	2,770	0,228	1,420	,246	
	1-3 Years	75	2,895	0,572			
	More than 3 Years	114	2,901	0,282			
Personal and Social Development	Less than 1 Year	186	2,570	0,296	3,328	,039*	3 Years + > Less than 1 Year
	1-3 Years	75	2,736	0,364			
	More than 3 Years	114	2,766	0,343			
Hygiene	Less than 1 Year	186	2,160	0,427	7,333	,001*	3 Yıl + ve 1-3 Years > Less than 1 Year
	1-3 Years	75	2,453	0,438			
	More than 3 Years	114	2,568	0,492			
Canteen Services	Less than 1 Year	186	2,490	0,401	1,780	,173	
	1-3 Years	75	2,598	0,349			
	More than 3 Years	114	2,669	0,440			
Programme Support	Less than 1 Year	186	2,600	0,434	1,690	,189	
	1-3 Years	75	2,752	0,638			
	More than 3 Years	114	2,815	0,352			
Atmosphere	Less than 1 Year	186	2,410	0,422	1,481	,231	
	1-3 Years	75	2,568	0,352			
	More than 3 Years	114	2,552	0,386			
Suitability/Comfort	Less than 1 Year	186	2,660	0,444	4,023	,020*	3 Years + > Less than 1 Year
	1-3 Years	75	2,677	0,374			
	More than 3 Years	114	2,881	0,244			
FCSQS	Less than 1 Year	186	4,002	0,651	1,760	,176	
	1-3 Years	75	4,079	0,529			
	More than 3 Years	114	4,271	0,599			
Contract	Less than 1 Year	186	3,801	1,037	1,650	,196	
	1-3 Years	75	3,966	1,068			
	More than 3 Years	114	4,179	0,932			
Trainer Interest	Less than 1 Year	186	3,840	0,910	1,095	,338	
	1-3 Years	75	3,983	0,923			
	More than 3 Years	114	4,172	0,864			
Physical Evidence	Less than 1 Year	186	3,988	0,882	1,129	,327	
	1-3 Years	75	4,043	0,648			
	More than 3 Years	114	4,255	0,724			
Cleaning	Less than 1 Year	186	3,766	0,668	3,224	,043*	3 Years + > Less than 1 Year
	1-3 Years	75	4,180	0,581			
	More than 3 Years	114	4,153	0,846			
Interaction	Less than 1 Year	186	4,572	0,556	2,272	,107	
	1-3 Years	75	4,720	0,397			
	More than 3 Years	114	4,789	0,501			

*p<,05

The results of ANOVA analyses according to the duration of regular sport practice are presented in Table 7. As a result of the analyses, a significant difference ($p=0,018$) was found in the overall SFCSS scale. Significant differences were also found in the sub-dimensions of Personal and Social Development ($p=0,039$), hygiene ($p=0,001$), and Fitness/Relaxation ($p=0,020$). According to the results, it was found that participants who have been doing sports regularly for 3 years or more have higher satisfaction levels in the overall scale and these sub-dimensions compared to those who have been doing sports for less than 1 year. When the data belonging to FCSQS were analyzed, no significant difference was found in the overall scale, while it was concluded that those who have been doing sports for 3 years or more ($\bar{x}=4,153$) have higher scores at the level of significance than

those who have been doing sports for less than 1 year ($\bar{x}=3,766$) in the Cleanliness sub-dimension ($p=0,043$).

Table 8. ANOVA results according to the frequency of coming to the sports center

	Duration	N	\bar{X}	S	F	p	Post-Hoc
SFCSS	1-2 per week	36	2,645	0,353	3,055	,051	
	3-4 per week	198	2,656	0,263			
	5-6 per week	141	2,766	0,178			
Coach Approach	1-2 per week	36	2,774	0,386	3,490	,034*	5-6 per week > 1-2 per week
	3-4 per week	198	2,809	0,371			
	5-6 per week	141	2,930	0,154			
Support Staff Approach	1-2 per week	36	2,729	0,405	1,182	,310	
	3-4 per week	198	2,890	0,325			
	5-6 per week	141	2,883	0,341			
Personal and Social Development	1-2 per week	36	2,604	0,376	5,145	,007*	5-6 per week > 1-2 per week
	3-4 per week	198	2,655	0,333			
	5-6 per week	141	2,835	0,286			
Hygiene	1-2 per week	36	2,390	0,616	1,262	,287	
	3-4 per week	198	2,479	0,447			
	5-6 per week	141	2,531	0,465			
Canteen Services	1-2 per week	36	2,604	0,548	,657	,520	
	3-4 per week	198	2,575	0,415			
	5-6 per week	141	2,664	0,354			
Programme Support	1-2 per week	36	2,651	0,445	3,240	,043*	5-6 per week > 1-2 per week
	3-4 per week	198	2,722	0,549			
	5-6 per week	141	2,872	0,274			
Atmosphere	1-2 per week	36	2,437	0,453	,550	,578	
	3-4 per week	198	2,522	0,408			
	5-6 per week	141	2,569	0,378			
Suitability/Comfort	1-2 per week	36	2,708	0,541	,039	,961	
	3-4 per week	198	2,742	0,374			
	5-6 per week	141	2,734	0,373			
FCSQS	1-2 per week	36	4,050	0,891	1,731	,181	
	3-4 per week	198	4,041	0,616			
	5-6 per week	141	4,253	0,521			
Contract	1-2 per week	36	3,805	1,145	,169	,844	
	3-4 per week	198	3,941	1,084			
	5-6 per week	141	3,996	0,901			
Trainer Interest	1-2 per week	36	3,833	0,927	3,313	,040*	5-6 per week > 1-2 per week
	3-4 per week	198	4,000	0,991			
	5-6 per week	141	4,267	0,691			
Physical Evidence	1-2 per week	36	4,142	0,957	,467	,628	
	3-4 per week	198	4,032	0,795			
	5-6 per week	141	4,176	0,761			
Cleaning	1-2 per week	36	4,055	1,196	2,163	,119	
	3-4 per week	198	3,974	0,666			
	5-6 per week	141	4,258	0,631			
Interaction	1-2 per week	36	4,333	0,725	3,133	,047*	5-6 per week > 1-2 per week
	3-4 per week	198	4,674	0,472			
	5-6 per week	141	4,744	0,495			

* $p<,05$

When the answers given to the variable of weekly attendance to the sports center were examined, no significant difference was found in the overall scales of SFCSS and FCSQS, but significant differences were found in the sub-dimensions (Table 8). In the sub-dimensions of Coaching Approach ($p=0,034$), Personal and Social Development ($p=0,007$), and Programme Support ($p=0,043$) of the SFCSS, it was found that those who do sports 5-6 times a week have significantly higher scores than those who do sports 1-2 times a week. When the sub-dimensions belonging to FCSQS were examined, it was determined that those who played sports 5-6 times a week had higher scores than those who played sports 1-2 times a week in the sub-dimensions of Coach interest ($p=0,040$) and Interaction ($p=0,047$).

Table 9. Correlation Analysis of SFCSS and FCSQS

		N	\bar{X}	σ	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	SFCSS	375	2,696	0,249	-	,736**	,573**	,620**	,715**	,648**	,578**	,714**	,524**	,613**	,383**	,567**	,459**	,507**	,330**
2	Coach Approach	375	2,836	0,316	,736**	-	,498**	,321**	,277**	,273**	,658**	,281**	,302**	,474**	,251**	,586**	,226**	,361**	,345**
3	Support Staff Approach	375	2,872	0,339	,573**	,498**	-	,183*	,219**	,312**	,253**	,238**	,283**	,272**	,239**	,149*	,233**	,161*	,304**
4	Personal and Social Development	375	2,718	0,331	,620**	,321**	,183*	-	,498**	,352**	,278**	,395**	,176*	,287**	,107	,250**	,238**	,293**	,231**
5	Hygiene	375	2,452	0,472	,715**	,277**	,219**	,498**	-	,424**	,176*	,693**	,270**	,518**	,338**	,395**	,449**	,551**	,068
6	Canteen Services	375	2,612	0,407	,648**	,273**	,312**	,352**	,424**	-	,162*	,454**	,385**	,403**	,344**	,232**	,361**	,339**	,204*
7	Programme Support	375	2,741	0,463	,578**	,658**	,253**	,278**	,176*	,162*	-	,183*	,222**	,408**	,104	,623**	,244**	,268**	,227**
8	Atmosphere	375	2,532	0,400	,714**	,281**	,238**	,395**	,693**	,454**	,183*	-	,423**	,421**	,337**	,337**	,348**	,332**	,110
9	Suitability/Comfort	375	2,736	0,389	,524**	,302**	,283**	,176*	,270**	,385**	,222**	,423**	-	,290**	,196*	,217**	,264**	,187*	,252**
10	FCSQS	375	4,122	0,617	,613**	,474**	,272**	,287**	,518**	,403**	,408**	,421**	,290**	-	,740**	,821**	,780**	,764**	,555**
11	Contract	375	3,949	1,018	,383**	,251**	,239**	,107	,338**	,344**	,104	,337**	,196*	,740**	-	,460**	,454**	,378**	,250**
12	Trainer Interest	375	4,012	0,900	,567**	,586**	,149*	,250**	,395**	,232**	,623**	,337**	,217**	,821**	,460**	-	,492**	,572**	,419**
13	Physical Evidence	375	4,097	0,795	,459**	,226**	,233**	,238**	,449**	,361**	,244**	,348**	,264**	,780**	,454**	,492**	-	,521**	,358**
14	Cleaning	375	4,089	0,724	,507**	,361**	,161*	,293**	,551**	,339**	,268**	,332**	,187*	,764**	,378**	,572**	,521**	-	,472**
15	Interaction	375	4,668	0,517	,330**	,345**	,304**	,231**	,068	,204*	,227**	,110	,252**	,555**	,250**	,419**	,358**	,472**	-

**p<,01; *p<,05

Table 9 presents the results of Pearson correlation analysis between the Sports Facility Customer Satisfaction Scale (SFCSS) and the Fitness Centers Service Quality Scale (FCSQS). When the results are analyzed, it is seen that there is a strong and positive correlation between SFCSS and FCSQS ($r=0.613$, $p<0.01$). This shows that customer satisfaction increases with the increase in service quality in sports facilities. In addition, relationships at various levels were also determined between the sub-dimensions of SFCSS and FCSQS. For example, a strong relationship ($r=0.736$, $p<0.01$) was found between SFCSS and Coach Approach, and a strong relationship ($r=0.715$, $p<0.01$) was found between SFCSS and Hygiene. In addition, moderate positive correlations were found between SFCSS and Atmosphere ($r=0.714$, $p<0.01$), Appropriateness/Comfort ($r=0.524$, $p<0.01$), and Contract ($r=0.383$, $p<0.01$). However, weaker relationships were found between SFCSS and other sub-dimensions. For example, a moderate relationship ($r=0.459$, $p<0.01$) was found between SFCSS and Cleanliness. The present findings show that customer satisfaction increases with the increase in service quality in sports facilities and these two factors support each other.

DISCUSSION AND CONCLUSION

In the study, various methods were used by focusing on a specific topic, and the data obtained were analyzed. The results obtained were compared with the information in the existing literature and supported by studies with both similar and different results. When the analyses of the scales used to collect data were examined, it was found that Cronbach's Alpha value of the overall SFCSS was 0.896 and the Cronbach's Alpha value of the overall FCSQS was 0.936 (Table 2). These results show that the scales are sufficient and reliable for our study.

(H1) The hypothesis that there is a significant relationship between service quality and customer satisfaction in sports enterprises according to gender variable was not supported by the general averages of the scales (Table 3). However, when the appropriateness (comfort) sub-dimension of the SFCSS scale was analyzed, it was concluded that women ($\bar{x}=2.841$) had a higher mean than men ($\bar{x}=2.684$) ($p=0.026$). This shows that women feel more comfortable in the gym where they receive service. In the study conducted by Ergün (2018), no significant difference was found between individuals' service quality and gender variable, and it was found to be like our study. In addition, Jiang and Zhang (2016) concluded that gender variable had no effect on satisfaction level in their study and showed similarities with our study. Duman (2022) reached a difference between gender variables and service quality perceptions in his study conducted with individuals benefiting from sports facilities. According to the result, it was found that the service quality perception of women was higher than that of men. When the studies conducted in the literature are examined, Afthinos et al. (2005), Türksoy and Aycan (2020) and Yıldız et al., (2021) also found a significant difference between gender variables and service quality.

(H2) The results show that the hypothesis that there is a significant relationship between service quality and customer satisfaction in sports organizations according to the marital status variable is not confirmed (Table 4). When the cleanliness sub-dimension of the FCSQS was analyzed, it was found that single participants ($\bar{x}=4.163$) had a higher mean ($p=0.042$) than married participants ($\bar{x}=3.855$). There may be many reasons for this result. However, this result may be due to the higher hygiene and cleanliness standards of married individuals, especially those who have children. Another reason may be that since married individuals are more sensitive about family health, they expect such an expectation from the enterprises they receive service from and act more sensitively in this regard than singles. As a result of the literature review, it was found that in some studies, significant differences were found when individuals' perceptions of service quality and customer satisfaction were evaluated in terms of marital status variable (Aksoylu, 2019; Baş et al., 2017; Demirel, 2013; Ergin et al., 2011), while in some studies, no significant difference was found (Ergün, 2018; Theodorakis et al., 2004).

(H3) There is a significant relationship between service quality and customer satisfaction in sports enterprises according to age variable was not supported by the results (Table 5). When the sub-dimensions of the scales were examined, it was determined that there were statistical differences

between age groups in the personal and social development sub-dimension ($p=0.009$) and hygiene sub-dimension ($p=0.011$) in the SFCSS. When the results obtained in the personal and social development sub-dimension were analyzed, it was found that the 18-24 age group ($\bar{x}=2.822$) had higher scores than individuals aged 45 and over ($\bar{x}=2.525$). When the hygiene sub-dimension was analyzed, it was determined that the 18-24 age group ($\bar{x}=2.609$) had higher averages than individuals aged 45 and over ($\bar{x}=2.300$). The results show that the 18-24 age group is more satisfied with personal and social development and hygiene issues than the 45 and over age group. It is thought that this may be because individuals in the higher age group are more sensitive to hygiene personal development and socialization issues compared to younger individuals. When the literature was examined, studies that did not reach a significant difference between age variable and service quality and were like our study were found (Duman, 2022; Güzel & Taşçı, 2020). In the study conducted by Çolak et al. (2022) to determine the satisfaction levels of individuals receiving sports services, significant differences were found in terms of age variable and differed from our study. In the study conducted by Türksoy and Aycan (2020), a significant difference was found in the sub-dimension of the scale used. According to the result, it was observed that quality perception increased as age decreased.

(H4) When the results are analyzed, it is determined that the hypothesis that there is a significant relationship in terms of service quality and customer satisfaction in sports enterprises according to the education level variable is not supported (Table 6). When the result is evaluated, it can be said that the education level of individuals receiving services from sports enterprises is not a factor affecting service quality and customer satisfaction. However, a different conclusion can be reached in studies to be conducted in different enterprises or in different sample groups. In the study conducted by Güzel and Taşçı (2020) and Yıldız et al., (2021) with individuals receiving service from fitness centers, significant differences were found between the educational status of the participants and their perceptions of service quality, and a different conclusion was reached from our study. Jiang and Zhang (2016) also concluded that the level of education did not affect customer satisfaction in their study and showed similarities with our study.

(H5) When the results are evaluated, the hypothesis that there is a significant relationship in terms of service quality and customer satisfaction in sports enterprises according to the variable of doing regular sports is confirmed (Table 7). According to the results, statistically significant differences were found in the general ($p=0.018$) and personal and social development ($p=0.039$), hygiene ($p=0.001$), and suitability/comfort ($p=0.020$) sub-dimensions of the SFCSS. The results of the analysis show that participants who have been practicing sports regularly for 3 years or more have higher satisfaction levels than those who have been practicing sports for less than 1 year. The fact that individuals who do sports for a long time have experienced the services offered by the business in depth may have affected this result. This experience may positively affect both service quality and customer satisfaction. When the FCSQS was analyzed, it was found that there was no significant difference in the overall scale, but in the cleaning sub-dimension, participants who have been doing sports for less than 1 year ($\bar{x}=3.766$) have a lower satisfaction level than individuals

who have been doing sports for more than 3 years ($\bar{x}=4.153$) ($p=0.043$). In the study conducted by Güzel and Taşçı (2020), no significant difference was found between the year of doing sports and service quality, and a different result was reached from our study.

(H6) The hypothesis that there is a significant relationship between service quality and customer satisfaction in sports enterprises according to the frequency of visiting the sports center was not confirmed (Table 8). However, when the sub-dimensions of the scales were examined, statistically significant differences were found in the sub-dimensions of coach approach ($p=0.034$), personal and social development ($p=0.007$), and program support ($p=0.043$) of the SFCSS. Regarding the sub-dimensions of the FCSQS, significant differences were found in the sub-dimensions of coach interest ($p=0,040$) and interaction ($p=0,047$). In all sub-dimensions, it was found that those who do sports 5-6 times a week have higher averages compared to those who do sports 1-2 times a week. In other words, it has been determined that individuals who come to sports more frequently have more positive feedback in terms of customer satisfaction sub-dimensions and service quality sub-dimensions. When other studies in the literature and the results we have reached in the sub-dimensions are related, Pradeep et al., (2020) with Çiftçi and Çakmak (2018) concluded that weekly frequency of use affects the perception of service quality in their study conducted in a fitness center. In other words, the service quality perception of those who use the gym more frequently was found to be at a higher level.

(H7) The findings confirmed the hypothesis that there is a significant relationship between service quality and customer satisfaction in sports organizations. When the results obtained were analyzed, it was found that there was a strong and positive relationship between SFCSS and FCSQS ($r=0,613$, $p<0,01$) (Table 9). In addition, significant differences were also found between the sub-dimensions of SFCSS and FCSQS. In addition to a strong relationship between the sub-dimensions of Coaching Approach ($r=0,736$, $p<0,01$) and Hygiene ($r=0,715$, $p<0,01$), there was a moderate positive relationship between the sub-dimensions of Atmosphere ($r=0,714$, $p<0,01$), Appropriateness/Comfort ($r=0,524$, $p<0,01$), and Contract ($r=0,383$, $p<0,01$). These results show that businesses that increase the perception of service quality in their customers increase customer satisfaction in parallel. When the literature is analyzed, a positive relationship has been found between service quality and customer satisfaction in sports businesses in many studies, which is in parallel with the results of our research. Berber and Mollaoğulları (2020) and Günel and Duyan (2020) found that service quality has a significant and positive effect on customer satisfaction in sports programs and facilities. Yıldız and Duyan (2019) and Tufantoz and Yıldız (2022) found that customer satisfaction partially mediates the relationship between service quality and customer loyalty in a sports and physical activity center. It can be said that the businesses that provide this are paving the way for their continued existence and have a higher potential to increase their market share. In addition, it is possible to find many studies supporting that there is a relationship between the services provided by organizations and customer satisfaction (Anderson & Mittal, 2000; Álvarez-García et al., 2019; Brocato et al., 2012; Heinonen & Strandvik, 2015; Kouthouris & Alexandris, 2005; Lentell, 2000; Novokreshchenova et al., 2016; Schneider et al., 2005;

Theodorakis et al., 2001). In addition to these, Ali and Raza (2017), Aşık (2016), Brady et al. (2001), Cronin et al. (2000), Duman (2022), Murray and Howat (2002), Nunkoo et al. (2017), Shonk and Chelladurai (2008), Shonk and Chelladurai (2009), Şahin and Şen (2017), Taşlıyan et al. (2017), Thamnopoulos et al. (2012), Theodorakis et al. (2001), Wu (2014), Barbosa et al. (2019), Pradeep et al., (2020) also found that there is a relationship between service quality and customer satisfaction.

Customers expect the service they receive from sports businesses to be of high quality. The fact that sports businesses provide a quality service by acting with the awareness of this leads customers to feel valuable. Individuals who feel that they receive a quality service increase their satisfaction levels. Both the results we have reached from the literature and the findings of our study support this. According to the result obtained from our study, there is a strong and positive relationship between service quality and customer satisfaction ($r=0,613$, $p<0,01$). This shows that customer satisfaction increases with the increase in service quality in sports facilities.

Recommendations

- When the results obtained are evaluated, it is necessary for sports enterprises to increase service quality to positively affect customer satisfaction. While doing this, it is important to consider all elements and act.
- It is important for enterprises to endeavour to increase the satisfaction levels of all participants by evaluating the significant differences that emerged because of the research findings.
- Conducting the study with larger sample groups, in different regions and sectors, and bringing the results to the literature will contribute to the subject.

Conflicts of Interest: The authors have no conflicts of interest to declare.

Authors' Contribution: Study Design AGG and MÇ, Data Collection MÇ and AA, Statistical Analysis AGG, Manuscript Preparation AGG and AA. All authors read and approved the final manuscript.

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The Effect of Person-Organization Fit on Organizational Citizenship Behavior in Sports Organizations*

Aynur AKGÜL^{1†}, Süleyman Murat YILDIZ²

¹Mugla Sıtkı Kocman University, Institute of Social Sciences, Mugla, Türkiye

²Mugla Sıtkı Kocman University, Faculty of Sport Sciences, Mugla, Türkiye

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Abstract

This study examined the effect of person-organization fit on organizational citizenship behavior in sports organizations. The data of the study was obtained from 192 employees working in various units of the Youth and Sports Provincial Directorate of Izmir, Turkey. Person-organization fit, and organizational citizenship behavior scales were used as data collection tools. The person-organization fit scale developed by Netemeyer, Boles, McKee, and McMurrian (1997) is one-dimensional and consists of 4 items. The organizational citizenship scale, developed by Podsakoff and MacKenzie (1997) and adapted into Turkish by Elçi (2005), consists of five dimensions and 20 items. The study's findings showed that person-organization fit significantly and positively affected organizational citizenship behavior ($\beta=0.258$; $p<0.01$). Additionally, the findings showed that person-organization fit significantly and positively affected the dimensions of altruism, sportsmanship, conscientiousness, and civic virtue. On the other hand, it was observed that person-organization fit did not have any effect on the courtesy dimension of organizational citizenship behavior.

Keywords: Person-organization fit, Organizational citizenship behavior, Sports organizations

* This paper was summarized from the first author's Master Thesis.

† **Corresponding Author:** Aynur Akgül, **E-mail:** akgulaynur@hotmail.com

INTRODUCTION

In recent years, in an intensely competitive environment, organizations are making more efforts to maintain their existence, develop, and increase their profitability. In this context, the performance of employees has an important place in the success of organizations. That's why organizations pay attention to all elements, from the recruitment of employees to their behavior in service production processes. The basis for this is that the employee's performance directly affects the organizational performance (Almatrooshi et al., 2016; Brewer, 2008). Many factors affect the performance of employees and organizations. In this context, our study addressed the issues of person-organization fit and organizational citizenship behavior.

Person-organization fit refers to the mutual satisfaction of expectations within the context of the employee and the organization, the parties having basic characteristics, and the resulting harmony (Morley, 2007). The basis of person-organization fit is based on Schneider's (1987) attraction-selection-attrition theory. According to this theory, people are attracted to organizations due to certain characteristics of the organizations. Afterward, organizations use selection methods to select those who are most compatible with the organization among the candidates they attract. Then, if the person adapts to the organization, he/she continues as an employee of the organization. Otherwise, if the person is not compatible with the organization, the person either leaves the organization voluntarily or is asked to leave by the organization. The other theory on which person-organization fit is based is Caplan's (1987) person-environment fit theory. This theory focuses on the fit between the person and the work environment. According to this theory, a person affects his environment on the one hand and is affected by the environment on the other. The person-environment fit can be rational fit (person-job fit and person-organization fit) or relational fit (person-manager fit and person-group fit). Person-job fit essentially refers to the employee's ability to fulfill the requirements of the job. Person-organization fit refers to the employee's suitability for the structure of the organization, as well as the employee's effort for the organization, and the organization's remuneration for the employee's effort. Person-manager fit essentially refers to the compatibility of personality, values, and behavioral styles between the employee and the manager, while person-group fit means the similarity of personality, attitude, value, purpose, and working style in the workgroup. As a result, if harmony between the employee and the organization is achieved, positive behavior occurs among the employees. If there is a good fit between the characteristics of the employees and the characteristics of the organization, high job satisfaction and performance (Akın & Göksel, 2024; Farooqui & Nagendra, 2014), low turnover intention and turnover rate appear in organizations (Abdalla et al., 2018).

Another issue that affects the performance of organizations is organizational citizenship behavior. To achieve their goals more effectively, organizations expect their employees to show extra behavior beyond the employment contract and voluntarily in favor of their organizations (Yildiz, 2011). These behaviors contribute positively to employees' own and other employees' work production processes, efficient use of resources, and the formation of a positive organizational image (Kumari & Thapliyal, 2017; Podsakoff & MacKenzie, 1997). Organ (1988), who defines

organizational citizenship behavior as “the individual in the work environment voluntarily showing more effort and extra-role behavior beyond the task and responsibility determined for him/herself”, divides these behaviors into five sub-dimensions named “altruism, conscientiousness, courtesy, sportsmanship, and civil virtue”. *Altruism* refers to sacrifices such as making sacrifices in tasks outside the scope of duty, taking on extra duties sometimes, and helping other colleagues. *Conscientiousness* refers to selfless efforts beyond job requirements (using resources efficiently, continuing to work to finish the job even after working hours, coming to work despite being sick, etc.). *Courtesy* refers to an employee volunteering to help another colleague experiencing work-related problems. *Sportsmanship* refers to being tolerant of difficulties encountered in the work environment and continuing to work without complaining even if there is a heavy workload. *Civic virtue* refers to supporting the policies implemented by the organization and participating in activities aimed at the organization's development (e.g. participation in organizational decisions, education, social, etc.). Organizational citizenship behavior has positive effects on the effectiveness and efficiency of organizations (Podsakoff & MacKenzie, 1997). There is ample evidence that the more employees exhibit organizational citizenship behavior, the more organizational success organizations will achieve (Duyan, 2021, Mackenzie et al., 2011; Walz & Niehoff, 2000, Yildiz, 2016).

No study has been found in the literature that examines the relationship between person-organization fit and organizational citizenship behavior in the context of sports organizations. Therefore, to contribute to the literature, our study focused on the relationship between person-organization fit and organizational citizenship behavior and revealed evidence from sports organizations.

METHOD

Research Model

The model of this study, which aims to determine the effect of person-organization fit on organizational citizenship behavior, is shown in Figure 1. In this model, the effect of person-organization fit on organizational citizenship behavior is shown.

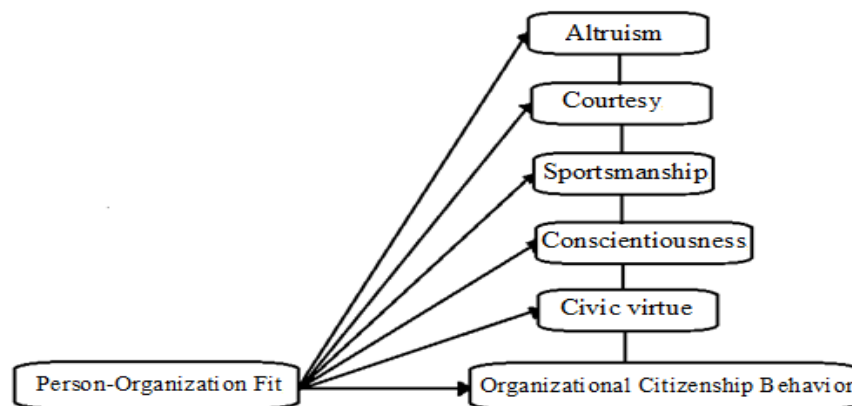


Figure 1. The effect of person-organization fit on organizational citizenship behavior

The following hypotheses were developed according to the model created within the framework of the purpose of the study.

H₁: Person-organization fit has a positive effect on the altruistic behavior of employees in sports organizations.

H₂: Person-organization fit has a positive effect on employees' courtesy behavior in sports organizations.

H₃: Person-organization fit has a positive effect on the sportsmanship behavior of employees in sports organizations.

H₄: Person-organization fit has a positive effect on employees' conscientiousness behavior in sports organizations.

H₅: Person-organization fit has a positive effect on employees' civic virtue behavior in sports organizations.

H₆: Person-organization fit has a positive effect on employees' organizational citizenship behavior in sports organizations.

Samples

The study was a survey, and a convenience sampling method was used to reach the sample. An important advantage of survey research is that it provides the researcher with a lot of information obtained from a sample consisting of a large number of people (Büyüköztürk, 2011). The research model is the arrangement of the necessary conditions for the collection and analysis of data for the research and economically (Karasar, 2007). Data were collected from the individuals participating in the research with the help of scales within the framework of the purpose of the study.

The study population of this study was created by the Youth and Sports Provincial Directorate of Izmir. The sample consisted of 192 employees working in various units of this organization. Some of the employees participated in the research through electronic communication tools and the other part through face-to-face survey application.

Instruments

Person-organization fit and organizational citizenship behavior scales, whose validity and reliability have been proven many times before, were used in the study. The person-organization fit scale developed by Netemeyer et al., (1997) is one-dimensional and consists of 4 items. The organizational citizenship behavior scale, developed by Podsakoff and MacKenzie (1997) and adapted into Turkish by Elçi (2005), consists of five dimensions and 20 items. The dimensions and the items they contain are as follows: Altruism (1-4), Courtesy (5-8), Sportsmanship (9-12), Conscientiousness (13-16), Civil Virtue (17-20).

Ethical Approval

Ethical approval of the study was obtained from Mugla Sıtkı Kocman University Social and Human Sciences Research Ethics Committee on 31.01.2021 with protocol number 210010 and decision number 33.

Statistical Analysis

Descriptive, reliability, correlation, and hierarchical regression analysis were used in the statistical analysis of the data in the study. The scale's reliability coefficients and sub-dimensions were calculated with Cronbach's Alpha coefficient. The relationship between variables was determined by correlation analysis, and the effect of person-organization fit on organizational citizenship behavior was determined by hierarchical regression analysis.

FINDINGS

Demographic Properties

The average age of the study participants is 35.31 ± 7.85 . The amount of participants is equal in terms of gender. There are more married people (57.3%) than single people (42.7%). In terms of education level, 58.3% of the participants have an undergraduate degree. Considering the working period, most participants are between 1-5 years (32.3%) and 6-10 years (37.5%), (Table 1).

Table 1. Demographic characteristics

Variables	X	Sd
Age	35.31	7.85
Gender	f	%
Male	96	50
Female	96	50
Marital status	f	%
Married	110	57.3
Single	82	42.7
Education	f	%
Middle	2	1.0
Lycee	20	10.4
Associate degree	35	18.2
Undergraduate	112	58.3
Graduate	23	12.0
Tenure	f	%
Less than 5 years	62	32.3
6 to 10 years	72	37.5
11 to 15 years	20	10.4
16 to 20 years	30	15.6
21 to 25 years	5	2.6
More than 26 years	3	1.6

Test for Reliability

In the reliability analysis conducted to determine the internal consistency of the person-organization fit scale, Cronbach's alpha value was found to be 0.941. In the reliability analysis conducted to determine the internal consistency of the organizational citizenship behavior scale, Cronbach's alpha value was found to be 0.894. The reliability values of the two scales are quite high (Alpar, 2001).

Correlation Analysis

According to the correlation analysis, there is a significant and positive relationship between person-organization fit and organizational citizenship behavior ($r=0.242$; $p<0.01$), sportsmanship ($r=0.179$; $p<0.05$), conscientiousness ($r=0.201$; $p<0.01$), and civic virtue ($r=0.232$; $p<0.01$), (Table 2).

Table 2. Results of correlation analysis

Variables	1	2	3	4	5	6
1. Age	1					
2. Gender	-.175*	1				
3. Marital status	-.269**	-.084	1			
4. Education	-.076	-.098	-.041	1		
5. Tenure	.811**	-.141	-.272**	-.183*	1	
6. Person-organization fit	-.022	-.054	.031	-.030	-.064	1
7. Altruism	-.036	.187**	-.102	.091	-.065	.129
8. Courtesy	-.087	-.038	.075	.176*	-.119	.057
9. Sportsmanship	-.198**	.285**	.065	-.046	-.169*	.179*
10. Conscientiousness	-.097	.253**	-.114	-.108	-.086	.201**
11. Civic virtue	.005	.325**	-.172*	-.148*	.004	.232**
12. Organizational citizenship behavior	-.105	.315**	-.097	-.035	-.111	.242**

* $p<0.05$; ** $p<0.01$

Table 2. Results of correlation analysis (Continued)

Variables	7	8	9	10	11	12
1. Age						
2. Gender						
3. Marital status						
4. Education						
5. Tenure						
6. Person-organization fit						
7. Altruism	1					
8. Courtesy	.557**	1				
9. Sportsmanship	.296**	.280**	1			
10. Conscientiousness	.345**	.244**	.465**	1		
11. Civic virtue	.348**	.145*	.243**	.556**	1	
12. Organizational citizenship behavior	.721**	.576**	.624**	.779**	.735**	1

* $p<0.05$; ** $p<0.01$

Hierarchical Regression Analysis

The Effect of Person-Organization Fit on Altruism

The hierarchical regression analysis conducted to determine the effect of person-organization fit on the altruism dimension is presented in Table 3. The analysis result showed that person-organization fit significantly and positively affected the altruism dimension ($\beta=0.144$; $p<0.05$). According to this result, Hypothesis 1 was accepted.

Table 3. Results of hierarchical regression analysis between person-organization fit and altruism

Independent Variables	Altruism					
	Step 1			Step 2		
	Beta	t	p	Beta	t	p
1. Age	.039	.313	.755	.026	.209	.835
2. Gender	.187	2.541	.012	.196**	2.681	.008
3. Marital status	-.096	-1.216	.225	-.098	-1.260	.209
4. Education	.091	1.224	.223	.099	1.342	.181
5. Tenure	-.088	-.701	.484	-.067	-.531	.596
6. Person-organization fit	-	-	-	.144*	2.018	.045
F		2.213			2.554	
R ²		.056			.076	
Adjusted R ²		.031			.047	

Note: Standardized beta values were used, ** $p < 0.01$, * $p < 0.05$

The Effect of Person-Organization Fit on Courtesy

The hierarchical regression analysis conducted to determine the effect of person-organization fit on the courtesy dimension is presented in Table 4. The analysis result indicated that person-organization fit did not have any effect on the courtesy dimension. According to this result, Hypothesis 2 was rejected.

Table 4. Results of hierarchical regression analysis between person-organization fit and courtesy

Independent Variables	Courtesy					
	Step 1			Step 2		
	Beta	t	p	Beta	t	p
1. Age	.013	.105	.916	.008	.066	.948
2. Gender	-.023	-.314	.754	-.020	-.268	.789
3. Marital status	.111	1.415	.159	.110	1.400	.163
4. Education	.169	2.273	.024	.172*	2.307	.022
5. Tenure	-.061	-.483	.630	-.053	-.417	.677
6. Person-organization fit	-	-	-	.053	.738	.461
F		1.965			1.724	
R ²		.050			.053	
Adjusted R ²		.025			.022	

Note: Standardized beta values were used, ** $p < 0.01$, * $p < 0.05$

The Effect of Person-Organization Fit on Sportsmanship

The hierarchical regression analysis conducted to determine the effect of person-organization fit on the sportsmanship dimension is presented in Table 5. The analysis result showed that person-organization fit significantly and positively affected the sportsmanship dimension ($\beta=0.189$; $p<0.01$). According to this result, Hypothesis 3 was accepted.

Table 5. Results of hierarchical regression analysis between person-organization fit and sportsmanship

Independent Variables	Sportsmanship					
	Step 1			Step 2		
	Beta	t	p	Beta	t	p
1. Age	-.120	-.992	.323	-.138	-1.152	.251
2. Gender	.257	3.589	.000	.269**	3.815	.000
3. Marital status	.025	.329	.743	.022	.289	.773
4. Education	-.035	-.485	.628	-.024	-.343	.732
5. Tenure	-.033	-.268	.789	-.004	-.036	.972
6. Person-organization fit	-	-	-	.189**	2.752	.007
<i>F</i>		4.409			5.066	
<i>R</i> ²		.106			.141	
<i>Adjusted R</i> ²		.082			.113	

Note: Standardized beta values were used, ***p* <0.01, **p* <0.05

The Effect of Person-Organization Fit on Conscientiousness

The hierarchical regression analysis conducted to determine the effect of person-organization fit on the conscientiousness dimension is presented in Table 6. The analysis result indicated that person-organization fit significantly and positively affected the conscientiousness dimension ($\beta=0.212$; $p<0.01$). According to this result, Hypothesis 4 was accepted.

Table 6. Results of hierarchical regression analysis between person-organization fit and conscientiousness

Independent Variables	Conscientiousness					
	Step 1			Step 2		
	Beta	t	p	Beta	t	p
1. Age	-.051	-.421	.674	-.071	-.592	.554
2. Gender	.213	2.964	.003	.227**	3.217	.002
3. Marital status	-.156	-2.032	.044	-.160*	-2.130	.035
4. Education	-.116	-1.604	.110	-.105	-1.470	.143
5. Tenure	-.093	-.756	.451	-.061	-.506	.614
6. Person-organization fit	-	-	-	.212**	3.089	.002
<i>F</i>		3.957			5.040	
<i>R</i> ²		.096			.140	
<i>Adjusted R</i> ²		.072			.113	

Note: Standardized beta values were used, ***p* <0.01, **p* <0.05

The Effect of Person-Organization Fit on Civic Virtue

The hierarchical regression analysis conducted to determine the effect of person-organization fit on the civic virtue dimension is presented in Table 7. The analysis result showed that person-organization fit significantly and positively affected the civic virtue dimension ($\beta=0.251$; $p<0.01$). According to this result, Hypothesis 5 was accepted.

Table 7. Results of hierarchical regression analysis between person-organization fit and civic virtue

Independent Variables	Civic Virtue					
	Step 1			Step 2		
	Beta	t	p	Beta	t	p
1. Age	.050	.418	.676	.027	.232	.816
2. Gender	.303	4.327	.000	.319**	4.707	.000
3. Marital status	-.164	-2.190	.030	-.168*	-2.331	.021
4. Education	-.137	-1.944	.053	-.123	-1.804	.073
5. Tenure	-.078	-.651	.516	-.040	-.347	.729
6. Person-organization fit	-	-	-	.251**	3.800	.000
<i>F</i>		6.298			8.035	
<i>R</i> ²		.145			.122	
<i>Adjusted R</i> ²		.207			.181	

Note: Standardized beta values were used, ** $p < 0.01$, * $p < 0.05$

The Effect of Person-Organization Fit on Organizational Citizenship Behavior

The hierarchical regression analysis conducted to determine the effect of person-organization fit on organizational citizenship behavior is presented in Table 8. The analysis result indicated that person-organization fit significantly and positively affected organizational citizenship behavior ($\beta=0.258$; $p<0.01$). According to this result, Hypothesis 6 was accepted.

Table 8. Results of hierarchical regression analysis between person-organization fit and organizational citizenship behavior

Independent Variables	Organizational Citizenship Behavior					
	Step 1			Step 2		
	Beta	t	p	Beta	t	p
1. Age	-.012	-.100	.920	-.036	-.306	.760
2. Gender	.290	4.076	.000	.307**	4.454	.000
3. Marital status	-.106	-1.399	.164	-.111	-1.514	.132
4. Education	-.032	-.446	.656	-.018	-.253	.801
5. Tenure	-.105	-.857	.393	-.066	-.556	.579
6. Person-organization fit	-	-	-	.258**	3.843	.000
<i>F</i>		4.753			6.715	
<i>R</i> ²		.113			.179	
<i>Adjusted R</i> ²		.089			.152	

Note: Standardized beta values were used, ** $p < 0.01$, * $p < 0.05$

DISCUSSION AND CONCLUSION

Our study examined the effect of person-organization fit on organizational citizenship behavior in the context of sports organizations. There is a gap in the literature as there is no study on the relationship between these two variables in sports organizations, so the findings of our research will contribute to filling this gap.

The findings of our study showed that person-organization fit significantly and positively affects organizational citizenship behavior ($\beta=0.258$; $p<0.01$). Additionally, the findings indicated that person-organization fit significantly and positively affected the altruism dimension ($\beta=0.144$; $p<0.05$), sportsmanship dimension ($\beta=0.189$; $p<0.01$), conscientiousness dimension ($\beta=0.212$; $p<0.01$), and civic virtue dimension ($\beta=0.251$; $p<0.01$). On the other hand, it was observed that person-organization fit did not have any effect on the courtesy dimension.

In the literature, there are studies in various sectors examining the relationships between person-organization fit and organizational citizenship behavior. Studies conducted in the manufacturing company (Akbaş, 2011), banking sector (Can & Kerse, 2020), service sector (Afsar & Badir, 2016; Bozdoğan, 2023), and health sector (Polatçı & Cindiloğlu, 2013) have found a significant and positive relationship between person-organization fit and organizational citizenship behavior. Similarly, a significant and positive relationship was found between person-organization fit and all sub-dimensions of organizational citizenship behavior. Therefore, these studies show that there is a consensus that person-organization fit positively affects organizational citizenship behavior. Unlike these studies, our study showed that only person-organization fit did not have any effect on the courtesy dimension. Accordingly, it can be said that sports sector employees have problems being tolerant of the difficulties encountered in the work environment and continuing to work without complaining even if there is an intense workload. This situation may be due to employees and organizational policies, such as employees not being able to fully meet job requirements and remuneration. For this reason, future studies may be recommended to include variables that may be the source of this situation.

As a result, our study has revealed empirical evidence from the sports sector that person-organization fit has a positive effect on organizational citizenship behavior. Many studies have similarly demonstrated that person-organization fit is an important factor that increases employee performance (Farooqui & Nagendra, 2014; Lauver & Kristof-Brown, 2001; Kristof-Brown et al., 2005; Rajper et al., 2020; Schwepker, 2015; Silverthorne, 2004; Sorlie et al., 2022). Therefore, for organizations to achieve positive gains such as performance and organizational citizenship behavior, they must first recruit employees with adaptable characteristics. Then, they need to implement other mechanisms that will ensure person-organization harmony. Since the sample of our study was limited to a certain region and employees, the results cannot be generalized to the entire sector. Since the sports sector consists of a wide variety of subfields, future research can be recommended in different areas and on different samples.

Conflict of Interest: There is no personal or financial conflict of interest between the authors in this article.

Authors' Contribution: Research Design-AA; SMY, Data Collection-AA; Statistical Analysis-AA; SMY, Manuscript Preparation-AA; SMY.

Ethical Approval

Ethics Committee: Mugla Sıtkı Kocman University Social and Humanities Research Ethics Committee

Date: 31.01.2021

Desicion No: 33

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An Investigation of the Relationship Between Imagery and Sportive Confidence in Volleyball Athletes*

Yılmaz ÇAKICI[†], Aşlıhan ARSLANGÖRÜR¹

¹Tekirdağ Namık Kemal University, Faculty of Sport Sciences, Tekirdağ

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Abstract

The aim of this research is to examine the relationship between imagery in sports and the sportive confidence in athletes who play volleyball. 277 elite athletes who play volleyball, from 3 league levels (1st League, 2nd League, and Super League) between the ages of 18 and 35 (23.32 ± 4.16), of which 157 are women (21.78 ± 3.54), and 120 are men (25.33 ± 4.04) form the sample population of the research. Personal Information Form, Imaging Inventory, and Continuous Sportive Self-Confidence Inventory were applied to collect data. Independent T-test was applied to examine the distribution of the scores of sub-dimensions of imaging in sports and sportive confidence according to the variables gender, status of national team participation, and athlete's age, and Tukey HSD test with One-Way ANOVA was applied to examine the distribution according to active years in sports, age, and league level. After the findings from the analysis, it was determined that there was a meaningful difference between the sub-dimensions of imaging in sports and sportive confidence scores according to the variables of age, gender, sports age, the status of national team participation, league level, and active years in sports ($p < 0.05$).

Keywords: Imagery, Sportive confidence, Volleyball

Voleybol Sporcularında İmgeleme ve Sportif Güven Arasındaki İlişkinin İncelenmesi

Öz

Bu araştırmanın amacı voleybol oynayan sporcularda imgeleme ile sportif güven arasındaki ilişkinin incelenmesidir. Araştırmanın çalışma grubu elit düzeyde voleybol oynayan 3 lig düzeyinden (1. Lig, 2. Lig ve Süper Lig) yaşları 18 ile 35 arasında değişen (23.32 ± 4.16) 157 kadın (21.78 ± 3.54) ve 120 erkek (25.33 ± 4.04) olmak üzere toplam 277 sporcudan oluşmaktadır. Veri toplama amacı ile tüm katılımcılara Kişisel Bilgi Formu, Sporda İmgeleme Envanteri ve Sürekli Sportif Kendine Güven Envanteri uygulanmıştır. Sporda imgeleme alt boyutları ile sportif güven arasındaki puanlarının cinsiyet, millilik durumu ve spor yaşı değişkenine göre dağılımını incelemek için independent-samples t-testi, sporcuların profesyonel sporculuk yılı, yaş ve lig düzeyi değişkenine göre incelemek için de One-Way ANOVA ile Tukey HSD testi uygulanmıştır. Analiz bulgularının sonucunda araştırmaya katılan sporcuların sporda imgeleme alt boyutları ile sportif güven puanları arasında yaş, cinsiyet, spor yaşı, millilik durumu, lig düzeyi ve profesyonel sporculuk yılı değişkenleri arasında anlamlı bir fark olduğu saptanmıştır ($p < 0.05$).

Anahtar Kelimeler: İmgeleme, Sportif güven, Voleybol

* This study is derived from the second author's master thesis, completed under the supervision of the 1st author.

[†] **Corresponding Author:** Yılmaz Çakıcı, **E-mail:** ycakici@nku.edu.tr

INTRODUCTION

In today's sports, productivity can be defined as the psychological, biomechanical, and physiological capacity that athletes demonstrate during movement. The ability of athletes to achieve high-level success depends on the renewal of both their physiological and psychological capacities (Konter, 2003). Therefore, it is crucial for athletes to be open to cognitive and emotional development as much as physical development (Andersen, 2000). In this context, it is of great importance for coaches and athletes to engage in activities that contribute to their holistic development, encompassing sensory, motor, physical, and mental aspects (Morris et al., 2005).

Mental imagery or visualization is one of the most important psychological techniques for enhancing an athlete's performance in the field of sports psychology. Visualization exercises, when combined with efforts to improve technical, tactical, and motor skills, support athletes' development in various areas. The simulation of real experiences in the mind is presented as visualization experiences. In other words, even without real-life experiences, we can feel the movements, taste, smell, and hear what we imagine. In sports, visualization is not only used for skill development but also for enhancing cognitive, behavioral, and effective expressions (Hall, 2001). Players and coaches can use imagery to develop strategies or tactics before a match. Planning and considering alternatives can have a positive effect on an athlete's decision-making process. Coaches can use imagery to decide on strategies to eliminate threats that arise during a match (Morris et al., 2005). In order to benefit most effectively from imagery experiences or training, they need to be carried out together with physical training and periodized within themselves (Burton & Raedeke, 2008). Using imagery involves closing your eyes and clearing your mind, but it can also be practiced by keeping a journal, watching a movie, listening to music, or watching a favorite athlete play (Smith & Kays, 2010). These different approaches integrating the senses, emotions, and cognitive processes makes imagery more holistic and a comprehensive mental practice.

The positive impact of mental skill training on performance in sports is highly significant. Visualization is recognized as an important tool for elevating performance throughout the entire competition. Athletes can visualize and feel themselves performing an activity during competition (Konter, 2006). Therefore, studies in sports psychology extensively include the concept of visualization (İkizler & Karagözoğlu, 1997). In this vein, mentally rehearsing or imagining performance of skills, strategies or scenarios have been key concepts in sports psychology.

An athlete's psychological state broadly influences their performance. When this idea is emphasized, it suggests that athletes and coaches should give psychological training as much importance as physical training. Within psychological training, mental rehearsal is seen as one of the most valuable methods for enhancing performance and readiness for competitions (Weinberg & Gould, 2003). Athletes that vividly picturing successful outcomes can improve their actual performance, increase confidence and reduce anxiety.

In this context, the aim of this research is to determine whether there is a relationship between imagery and athletic confidence among athletes playing in the professional leagues of the Turkish Volleyball Federation, considering various variables such as age, years of playing sports, gender, years as a professional athlete, national team status, and league level. Although imagery/visualization is among the most preferred psychological skill training methods, there are few studies in the literature concerning visualization and athletic confidence. This study, encompassing elite-level athletes, is expected to make a significant contribution to the literature.

When examining both domestic and international literature, it is evident that various studies have been conducted on visualization. In a study by Kendall et al. (1990), it was found that internal dialogue, visualization, and relaxation had a positive effect on basketball players' defensive performance. Similarly, research conducted by Callow, Hardy, and Hall (2002) on badminton players revealed that visualization increased athletes' confidence levels. Another study by Ramezani (2009) with professional and amateur volleyball players found that visualization during training increased players' self-confidence and individual movement capacity. Similarly, Orlick and Partington (1988) determined that a high number of Canadian Olympic athletes used visualization and were willing to do it regularly.

In another study examining the effect of visualization on self-confidence and anxiety performance in acrobatic gymnasts, Marshall and Gibson (2017) found that visualization increased athletic self-confidence but had no effect on athletic success and anxiety. Another research conducted with participants in a skating championship found that the use of visualization increased athletic confidence levels and reduced competition anxiety (Vadocz et al., 1997). Research with badminton players showed that visualization increased athletes' confidence levels (Callow, 2001). Recently, Budnik-Przybylska et al., (2022) examined the relationship between temperament traits, general imagery use tendency, and self-confidence in sports. The results reveal that self-confidence in sports is explained by a small minority through temperament and general imagery use, but specifically through general imagery use and the negative dimensions of temperament-emotionality. Concisely, general imagery makes clear the relationship between emotionality and self-confidence only in individual sports athletes.

In another study conducted currently, Grasel-Barbosa et al., (2023) conducted a study to examine the interplay between sport confidence and competitive performance among adolescent athletes. The study involved 519 athletes aged 14 to 19 who completed various instruments measuring sport confidence, social support, sport imagery, and subjective social status. It was shown that there were significant direct effects between sport confidence and social support, age, sport experience, performance, subjective social status and sport imagery. There was a significant positive direct effect of sport imagery on sport performance. Athletes who engage more in sport imagery tend to have better performance.

In Turkey, a study carried out by Ağılönü (2014) examined the imagination and problem-solving skills of athletes in various sports and found a significant positive relationship between motivational specific visualization, cognitive visualization, motivational general mastery scores, and years of engaging in sports. Ayaş (2019) examined the effect of visualization on athletic confidence in female athletes and found no significant difference in the scores of athletes on the sports visualization inventory sub-dimensions based on the variable of years of engaging in sports.

In another study, Çetinkaya (2015) found that the continuous sports confidence levels of athletes aged 26-30 significantly differed from those of athletes aged 20 and below. Accordingly, it was stated that the average scores of participants in the 26-30 age range were higher than those of participants aged 20 and below. On the other hand, Bilgin (2011) revealed through his study that self-confidence score averages significantly varied according to age, and this difference was observed between adolescents aged 16 and below and those aged 17 and above. Additionally, it was concluded that there was an increase in self-confidence levels parallel to age.

In a study conducted by İnan and colleagues (2017), which examined the continuous sports confidence among tennis players in terms of various variables, it was concluded that the sports confidence level of male athletes was higher than that of female athletes. The average score obtained from the continuous sports self-confidence scale by male participants was found to be higher than the average score of females. Savaş (2019), on the other hand, investigated whether the total score and sub-dimensions of sports imagery and the total score of continuous sports self-confidence of secondary school students participating in school sports differed according to the variable of being a national athlete. It was found that the cognitive imagery perceptions of national athletes were higher compared to non-national athletes. Similarly, in a study by Ayaş (2019), the results indicated a moderately positive relationship between imagery and sports confidence, suggesting that any change in imagery would affect sports confidence scores by 46 percent. In a recent study, Yalçın et al., (2022) investigated the effect of athletes' imagery abilities on mental toughness and sports confidence. A total of 627 volunteer athletes, actively participating in individual and team sports with licenses in the Eastern Anatolia Region of Turkey, participated in the research. In this study, participant completed Sportive Imagery Scale, Mental Toughness Scale in Sports and Sportive Continuous Self-Confidence Scale. According to the analysis results, significant relationships were found between imagery ability and the sub-dimensions of mental toughness and sports confidence in athletes. It was obvious that imagery ability is a significant factor affecting athletes' mental toughness and sports confidence levels.

In summary, the literature review reveals that visualization is associated with factors such as confidence, anxiety, relaxation, internal dialogue, physical skills, and athletic performance. Overall, studies have used surveys, video analysis, training aimed at measuring physical skills, or pre-test/post-test measurements. The findings generally suggest that visualization positively influences athletic confidence, increases athletes' confidence levels and athletic performance, leading to enhanced athlete performance.

METHOD

Research Model

In this study, the descriptive-relational survey model was applied. In research conducted within the scope of the descriptive-relational survey model, an event or situation is described as it is, and the relationships, effects, and degrees of the variables causing these situations are determined (Kaya et al., 2012).

Research Group

The study group consists of 277 athletes who play volleyball at an elite level across three league tiers (1st League, 2nd League, and Super League), with ages ranging from 18 to 35 (mean age: 23.32 ± 4.16). Among them, there are 157 female athletes (mean age: 21.78 ± 3.54) and 127 male athletes (mean age: 25.33 ± 4.04). Table 1 below presents the demographic characteristics of the athletes. Looking at these distributions, it can be observed that 56.7% of the participants are female athletes, while 43.3% are male athletes.

Table 1. Frequency and percentage distributions of athletes based on their demographic characteristics

Variables		N	%
Gender	Male	120	43.3
	Female	157	56.7
Years as a Pro Athlete	1-4 years	67	24.2
	5-8 years	99	35.7
	9-12 years	54	19.5
	12+ years	57	20.6
Years in Sports	5-15 years	202	72.9
	16-25 years	75	27.1
National Team Status	Yes	78	28.2
	No	199	71.5
Age	18-21 years	109	39.4
	22-25 years	92	33.2
	25-35 years	76	27.4
League Level	1st league	85	30.7
	2nd league	114	41.2
	Super league	78	28.2

Data Collection Tools

The data collection instruments of this study consist of a questionnaire divided into three parts.

Sports Imagery Inventory (SII): The Sports Imagery Inventory developed by Hall et al. was used to determine the types of imagery employed by athletes. The translation of the Sports Imagery Inventory into Turkish was conducted by Kızıldağ (2007). The SII consists of 21 items and has four subscales: Cognitive Imagery, Motivational Specific Imagery, Motivational General Arousal, and Motivational General Mastery.

The Sport Confidence Inventory (SCI): The Sport Confidence Inventory (SCI) was developed specifically for sports by Vealey in 1986. The inventory consists of 13 items measuring Continuous

Sport Confidence. The Sport Confidence Inventory has a single-factor structure. The adaptation of SCI to Turkish population was conducted by Engür et al., 2006 (as cited in Vurgun, 2010). Item analysis and reliability analysis were applied to the data obtained from the application of the Continuous Sport Confidence inventory to the sample, resulting in Cronbach's Alpha coefficients of 0.86 for internal consistency reliability (Vealey, 1986). The reliability coefficient for Cronbach's Alpha obtained for the Continuous Sport Confidence Inventory was 0.92 in this study.

Collection of Data

During the data collection process, appointments were first made with the coaches of volleyball players for application before training or competitions. In cases where the researcher could not visit the cities where the teams were located, the questionnaires were sent to the coaches by mail, and they were implemented under their supervision. After the application, the questionnaires were sent back to the researcher by mail. In cases where the researcher could visit the cities where the teams were located, information about the questionnaires was provided to the volleyball players by the researcher.

All applications were conducted with voluntary volleyball players before the start of training. There are an average of 12-14 athletes in each team. A total of 277 athletes were surveyed. In the applications, research questionnaires were distributed to the volleyball players. They were asked to answer the questions in a quiet environment. Identity information was not requested from the participants; only voluntary participation was considered. In the next stage, the completed questionnaires were reviewed, and 23 questionnaires were excluded from the analysis as they were randomly filled out and it was determined that various items or sections were left blank.

Ethical Approval

The study was ethically approved by Tekirdağ Namık Kemal University Scientific Research and Publication Ethics Board (Document date & no.: 15.10.2020/T2020-520).

Analysis of Data

All statistical analyses were conducted using SPSS. Correlation analysis was applied to examine the relationship between sports imagery subscales and sport confidence. Before comparing variables, a normality analysis was conducted. Since the skewness and kurtosis values were between -2 and +2, it was assumed that the variables had a normal distribution. Independent samples t-test was applied to examine the distribution of scores between sports imagery subscales and sport confidence based on gender, national team status, and years in sports variables. One-Way ANOVA test was applied to examine the distribution of scores based on athletes' years as a professional athlete, age groups, and league level variables (Since significant differences were found in the subscales, Tukey HSD test was applied). A significance level of $p \leq 0.05$ was considered in the analyses. Correlations were performed between the subscales. Since the assumptions of normality were met when examining the distribution of the subscales, Pearson correlation coefficient was calculated. Correlations were interpreted as low 0.00-0.30), moderate 0.30-0.70, and high 0.70 and above (Büyüköztürk et al., 2013).

FINDINGS

As shown in Table 2 below, when examining the relationship between sports imagery subscales and sport confidence, a statistically significant relationship was found between sports imagery subscales and sport confidence ($p \leq 0.01$). The relationship between Motivational General Mastery and Cognitive Imagery was high; the relationship between Motivational General Arousal and Motivational General Mastery, as well as Continuous Sport Confidence, was low, while the relationships between other structures were found to be moderate.

Table 2. Correlation analysis results of the relationship between sports imagery subscales and sport confidence.

		Motivational Specific	Motivational General Arousal	Motivational General Mastery	Cognitive Imaginary	Continuous Sport Confidence
Motivational Specific	p	-	.000**	.000**	.000**	.000**
	r		.453	.568	.644	.313
Motivational General Arousal	p		-	.000**	.000**	.005**
	r			.299	.388	.167
Motivational General Mastery	p			-	.000**	.000**
	r				.717	.567
Cognitive Imaginary	p				-	.000**
	r					.638
Continuous Sport Confidence	p					-
	r					

(**) $p < 0.01$

Table 3 below presents the results of independent-samples t-tests examining the scores of volleyball players on sports imagery subscales and sport confidence based on the gender variable. According to these results, a significant difference was observed between the scores of sports imagery subscales (except for motivational general arousal) and sport confidence based on the gender variable ($p < 0.05$).

Table 3. Independent-Samples t-test results for the scores of sports imagery subscales and sport confidence based on gender variable.

	Gender	N	X	Ss	t	p	d
Motivational Specific	Female	157	5.18	1.31	-3.25**	.001	0.40
	Male	120	5.69	1.21			
Motivational General Arousal	Female	157	4.86	1.15	-.90	.367	0.11
	Male	120	5.00	1.34			
Motivational General Mastery	Female	157	5.75	.95	-2.29*	.023	0.27
	Male	120	6.03	1.07			
Cognitive Imaginary	Female	157	5.40	.78	-4.80**	.000	0.58
	Male	120	5.89	.89			
Continuous Sport Confidence	Female	157	7.00	1.20	-4.52**	.000	0.55
	Male	120	7.65	1.15			

* $p < 0.05$, ** $p < 0.01$

When examining the average scores, it was determined that in all subscales where there was a difference, the average scores of males were higher than those of females. In the test results, it was found that the effect size was low between motivational general arousal and motivational general

mastery groups, moderate between motivational specific groups, and strong in favor of males between cognitive imagery and sport confidence (respectively; $d=0.11$; 0.27 ; 0.40 ; 0.58 ; 0.55).

Table 4 presents the results of independent-samples t-tests examining the scores of volleyball players on sports imagery subscales and sport confidence based on the variable of sport age. According to these results, there is a significant difference between the scores of motivational specific imagery, motivational general mastery, cognitive imagery, and sport confidence based on the variable of sport age ($p < 0.05$). When looking at the average scores, it can be observed that players aged between 13-24 years have higher average scores than those aged between 5-12 years.

Table 4. Independent-samples t-test results for the scores of sports imagery subscales and sport confidence based on sport age variable.

	Age	n	\bar{X}	Ss	t	p	d
Motivational Specific	5-12	150	5.15	1.33	-3.66**	.000	0.44
	13-24	127	5.71	1.18			
Motivational General Arousal	5-12	150	4.86	1.21	-.82	.409	0.10
	13-24	127	4.99	1.26			
Motivational General Mastery	5-12	150	5.76	1.03	-2.05*	.040	0.24
	13-24	127	6.01	.98			
Cognitive Imaginary	5-12	150	5.38	.86	-5.01**	.000	0.61
	13-24	127	5.89	.79			
Continuous Sport Confidence	5-12	150	7.07	1.19	-3.18**	.002	0.38
	13-24	127	7.53	1.22			

* $p < 0.05$, ** $p < 0.01$

In the test results, it was found that the effect size was low between motivational general arousal and motivational general mastery groups, moderate between motivational specific and sport confidence groups, and strong in favor of players aged between 13-24 years for cognitive imagery (respectively; $d=0.10$; 0.24 ; 0.44 ; 0.38 ; 0.61).

Table 5 presents the results of independent-samples t-tests examining the scores of volleyball players on sports imagery subscales and sport confidence based on the variable of national team membership. According to these results, there is a significant difference between the scores of all sports imagery subscales and sport confidence based on the national team membership variable ($p < 0.05$). When examining the average scores, it can be observed that national team players have higher average scores in all subscales compared to non-national team players.

In the test results, it was found that the effect size was low between motivational general arousal and motivational general mastery groups, moderate between cognitive imagery and sport confidence groups, and strong in favour of national team players for motivational specific (respectively; $d=0.26$; 0.23 ; 0.49 ; 0.43 ; 0.58).

Table 5. Independent-samples t-test results for the scores of sports imagery subscales and sport confidence based on national team membership variable

	National	n	\bar{X}	Ss	t	p	d
Motivational Specific	Yes	78	5.82	.97	3.38**	.001	0.58
	No	19	5.24	1.02			
Motivational General Arousal	Yes	78	5.16	1.28	2.04	.042	0.26
	No	19	4.83	1.21			
Motivational General Mastery	Yes	78	6.07	.97	1.98*	.048	0.23
	No	19	5.80	1.27			
Cognitive Imaginary	Yes	78	5.92	.91	3.73**	.000	0.49
	No	19	5.49	.82			
Continuous Sport Confidence	Yes	78	7.66	1.23	3.29**	.001	0.43
	No	19	7.13	1.19			

*p<0,05, **p<0,01

Table 6 presents the results of One-way ANOVA tests examining the scores of volleyball players on sports imagery subscales and sport confidence based on the variable of age. According to these results, significant differences were found between the scores of all sports imagery subscales and sport confidence based on the age variable ($p < 0.05$). Tukey HSD tests were conducted to determine which categories had significant differences. As a result of the statistical analysis, it was found that the average scores of athletes aged between 26-35 in all sub-dimensions of sport confidence and imagery were higher than those of athletes aged between 22-25 and 18-21. The test result revealed that the effect size between motivational general arousal, motivational specific, motivational general mastery, and sport confidence groups was negligible, while the effect size between cognitive imagery groups was low in favor of the 26-35 age group ($\eta^2 = 0.03$; 0.06; 0.03; 0.05; 0.10 respectively).

Table 6. One-way ANOVA test results for the relationship between imagery sub-dimensions in sports and sport confidence scores by age variable

	Age	n	\bar{X}	Ss	F	p	d
Motivational Specific	18-21	109	5.15	1.31	10.048**	.000	0.06
	22-25	92	5.25	1.26			
	26-35	76	5.95	1.14			
Motivational General Arousal	18-21	109	4.80	1.25	5.407**	.005	0.03
	22-25	92	4.75	1.22			
	26-35	76	5.31	1.17			
Motivational General Mastery	18-21	109	5.63	1.12	5.515**	.004	0.03 c>a,b
	22-25	92	5.97	.86			
	26-35	76	6.10	.96			
Cognitive Imaginary	18-21	109	5.31	.83	15.711**	.000	0.10
	22-25	92	5.66	.87			
	26-35	76	6.00	.75			
Continuous Sport Confidence	18-21	109	6.97	1.18	8.112**	.004	0.05
	22-25	92	7.33	1.28			
	26-35	76	7.28	1.08			

*p<0,05, **p<0,01

Table 7 presents the One-way ANOVA Test results for the relationship between imagery sub-dimensions and sport confidence scores by the variable of years as a professional athlete. According to these results, significant differences were observed in the sub-dimensions of motivational specific, motivational general mastery, cognitive imagery, and sport confidence scores based on the years of being a professional athlete ($p < 0.05$).

Table 7. One-way ANOVA test results for the relationship between imagery sub-dimensions in sports and sport confidence scores by years as a professional athlete variable

	Professional Years	n	\bar{X}	Ss	F	p	d
Motivational Specific	1-4	67	5.01	1.23	6.172**	.000	0.06
	5-8	99	5.34	1.30			
	9-12	54	5.41	1.26			
	12- ..	57	5.97	1.21			
Motivational General Arousal	1-4	67	4.99	1.11	3.251*	.022	0.03
	5-8	99	4.64	1.24			
	9-12	54	4.99	1.20			
	12- ..	57	5.25	1.33			
Motivational General Mastery	1-4	67	5.69	1.04	2.148	.094	0.02 d>c,b,a
	5-8	99	5.80	1.03			
	9-12	54	6.03	.79			
	12- ..	57	6.08	1.10			
Cognitive Imaginary	1-4	67	5.32	.77	6.925**	.000	0.07
	5-8	99	5.50	.91			
	9-12	54	5.88	.77			
	12- ..	57	5.89	.86			
Continuous Sport Confidence	1-4	67	7.03	1.10	4.601**	.004	0.04
	5-8	99	7.11	1.25			
	9-12	54	7.47	1.29			
	12- ..	57	7.71	1.12			

* $p < 0.05$, ** $p < 0.01$

To determine which categories these significant differences lie between, the Tukey HSD test was applied. According to the analysis, athletes with over 12 years of professional experience had higher average scores compared to all other groups in all sub-dimensions of imagery and sport confidence. The test result indicated that the effect size in all sub-dimensions was negligible.

Table 8 presents the One-way ANOVA Test results for the relationship between imagery sub-dimensions and sport confidence scores by the variable of league level. According to these results, significant differences were found in the sub-dimensions of motivational specific, motivational general mastery, cognitive imagery, and sport confidence scores based on the league level variable ($p < 0.05$). The Tukey HSD test was conducted to determine which categories these significant differences lie between.

Table 8. One-way ANOVA test results for the relationship between imagery sub-dimensions in sports and sport confidence scores by league level variable

	League Level	n	\bar{X}	Ss	F	p	d
Motivational Specific	1. league	85	5.16	1.21	14.141**	.000	0.10
	2. league	114	5.15	1.36			
	Super league	78	6.03	1.05			
Motivational General Arousal	1. league	85	4.95	1.19	2.474	.086	0.01
	2. league	114	4.75	1.21			
	Super league	78	5.15	1.30			
Motivational General Mastery	1. league	85	5.78	1.07	4.720*	.010	0.03 c>b,a
	2. league	114	5.75	1.06			
	Super league	78	6.17	.81			
Cognitive Imaginary	1. league	85	5.56	.76	15.613**	.000	0.10
	2. league	114	5.36	.86			
	Super league	78	6.04	.84			
Continuous Sport Confidence	1. league	85	7.18	1.24	4.502*	.012	0.03
	2. league	114	7.12	1.15			
	Super league	78	7.63	1.25			

*p<0,05, **p<0,01

According to the analysis results, in all dimensions where a difference was observed, athletes at the Super League level had higher average scores compared to those at the 1st and 2nd League levels. The test revealed that the effect size between the motivational specific and cognitive imagery groups favored players in the Super League at a low level (respectively; $\eta^2=0.10$; 0.10).

DISCUSSION AND CONCLUSION

In this research, the aim was to determine whether there is a relationship between imagery and sport confidence among athletes playing in the professional leagues of the Turkish Volleyball Federation, considering various variables such as age, years of sports experience, gender, years of professional sports experience, national team status, and league level. The following conclusions were reached based on the research results.

Evaluation of the Relationship between SIE and SSGC Results According to Gender Variable:

When the relationship between imagery and sport confidence was examined according to the gender variable in volleyball players, significant differences were observed in motivational specific, motivational general mastery, cognitive imagery sub-dimensions, and sport confidence scores ($p<0.05$). This finding is consistent with the results of a study conducted by Jones et al. (1991) with 28 male and 28 female university athletes. Additionally, research by Petruzzello and Corbin (1988) on the effect of performance feedback on women's self-confidence, and the study by Inan et al., (2017) on tennis players, parallel the results of this study.

Evaluation of the Relationship between SIE and SSGC Results According to Age Variable: When the relationship between imagery and sport confidence was examined according to the age variable

in volleyball players, significant differences were found in all sub-dimensions of imagery and sport confidence scores ($p<0.05$). The results of studies conducted by Durmaz (2019), Cetinkaya (2015), and Ulucan and Bolukbasi (2010) with elite athletes, licensed athletes, and university-level athletes, respectively, are parallel to the results of this study. Studies by Ungerleider et al. (1989), Bilgin (2011), and Matsushima and Shiomi (2003) focusing on track and field athletes, adolescents, and different age groups, also support the findings of this research.

Evaluation of the Relationship between SIE and SSGC Results According to Years of Sports Experience Variable: When the relationship between imagery and sport confidence was examined according to the years of sports experience variable in volleyball players, significant differences were observed in motivational specific, motivational general mastery, cognitive imagery sub-dimensions, and sport confidence scores ($p<0.05$). Studies by Salmon et al., (1994) and Micoogullari et al., (2009) with elite football players, Erdogan (2019) with individual and team sport athletes, Aslan (2014), and Isik (2018) with elite and non-elite athletes, respectively, are consistent with the results of this study

Evaluation of the Relationship between SIE and SSGC Results According to National Team Status Variable: When the relationship between imagery and sport confidence was examined according to the national team status variable in volleyball players, significant differences were found in all sub-dimensions of imagery and sport confidence scores ($p<0.05$). The findings of studies by Callow and Hardy (2001) and Öztürk et al. (2016), indicating that elite athletes use imagery more than non-elite athletes and that being a national athlete makes a difference, are in line with the results of this research.

Evaluation of the Relationship between SIE and SSGC Results According to Years of Professional Sports Experience Variable: When the relationship between imagery and sport confidence was examined according to the years of professional sports experience variable in volleyball players, significant differences were found in motivational specific, motivational general arousal, cognitive imagery sub-dimensions, and sport confidence scores ($p<0.05$). The results of a comparison conducted by Ekinçi et al., (2014) to determine the self-confidence of individuals playing sports professionally and amateurishly indicated a preference for professional athletes, albeit statistically insignificant, which aligns with the findings of this study.

Evaluation of the Relationship between SIE and SSGC Results According to League Level Variable: When the relationship between imagery and sport confidence was examined according to the league level variable in volleyball players, significant differences were observed in motivational specific, motivational general mastery, cognitive imagery sub-dimensions, and sport confidence scores ($p<0.05$). The results of a study by Yalçın (2019) with professional footballers correspond with the findings of this research

Evaluation of the Relationship between Sport Imagery Level and Sport Confidence: The relationship between the Sport Imagery Inventory (Mean=5.47, SD=0.88) and Sport Confidence Inventory (Mean=7.28, SD=1.22) scores was measured using Pearson Correlation. A moderate level of positive correlation was found between these variables at $r = 0.530$, which was statistically significant ($p < 0.01$). Thus, as sport imagery increases, sport continuous self-confidence also increases. This is in line with previous studies advocating for a relationship between imagery and sport confidence (Ayaş, 2019; Callow et al., 2001; Grasel Barbosa et al., 2023; Marshall & Gibson, 2017; Munroe-Chandler et al., 2008; Savaş, 2019; Vadocz et al., 1997; Yavaş et al., 2022).

In conclusion, similar to many studies in the literature, this research also revealed a positive relationship between imagery and sport confidence. Therefore, it can be said that engaging in imagery would be beneficial for increasing athletes' confidence levels. Implementing imagery in training content could positively affect sport confidence, thus enhancing performance.

Authors' Contribution: Study Design–YÇ, AA; Data Collection– AA; Statistical analysis– YÇ; AA; Manuscript Preparation– YÇ, AA

Conflict of Interest: There is no personal and financial conflict of interest within the scope of the study.

Ethical Approval

Board Name: Tekirdağ Namık Kemal Üniversitesi Scientific Research and Publication Ethics Board.

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Citation-Based Analysis of Studies on Physical Education Teachers: A Bibliometric Study*

Osman GÜLTEN¹, Ahmet DİNÇ^{1†}

¹Iğdır University, Faculty of Sport Sciences, Iğdır, Türkiye

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Abstract

Teaching is a profession that has been exercised since ancient times and has not lost its popularity. Knowledge has been transmitted through teaching throughout the ages. Today, teaching has become even more important due to rapidly changing information trends. This study aims to provide a general assessment of the research being carried out on teaching physical education between 2013 and 2023. In the study, foreign-language articles were searched in the Web of Science database. They were selected according to the inclusion and exclusion criteria. A total of 2145 studies were analysed. Bibliometric analysis is one of the quantitative research methods. The Vosviewer programme was used for the analyses. As a result of the search, some authors such as Richards, Kevin Andrew and Haerens, Leen are the most cited authors, the most cited studies in this area were reached in 2022, authors such as Pill, Shane and Vansteenkiste Maarten are among the most cited authors, Ryan and Deci's "Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions" by Ryan and Deci is the most cited work and Turkey is a cited country in research. It is believed that the results of this study will provide an important resource for understanding the existing literature in this area and provide a basis for future research.

Keywords: Bibliometric analysis, Citation analysis, Physical education teaching

* This article is based on a master's thesis

† **Corresponding Author:** Ahmet Dinç, **E-mail:** ahmet.dinc@igdir.edu.tr

INTRODUCTION

Profession is a field of endeavor that emerges as a result of the necessity of social life, arises from cooperation or work sharing in the execution of services in society, requires a certain education, and has social, cultural and economic dimensions (Ayas, 2009). The Ministry of National Education (MEB) defines the teaching profession as a specialized profession that undertakes the state's education, training and related administrative duties. Özbek (2008) defines physical education teaching as a field of specialization that adheres to the principles and regulations of Turkish National Education, has the field knowledge and general culture to implement the programs of the physical education course, and can work in in-school and out-of-school activities. Teachers have a direct impact on the trained manpower of the future. In this respect, it is important to pay attention to the education of teachers. In modern thinking, achieving organizational goals will be achieved through human resources (Gratton & Ghoshal, 2003). Organizations can improve and contribute to sustainable growth and performance by investing in employees' psychological capital. In this way, organizations can get ahead in the competitive race among themselves (Envick, 2005).

Teacher education has always been the subject of scientific research, as students' learning and success often depend on the competence of the teacher (MacPhail et al., 2023). Physical education teachers are also important in raising healthy individuals and athletes of the future. In this respect, a systematic analysis of the scientific literature on physical education teaching, the numerical and qualitative characteristics of the published articles, as well as the relationships and connections between these articles will highlight the deficiencies and needs in the field of physical education teaching. Our study gives us information about which countries have the most studies in the field of physical education and sport, who are the authors of the most studies, in which years more studies have been carried out and which are the most cited works. Considering these data, it is thought that leading countries, authors and works will give us important clues about which educational models and approaches they use and apply.

In the literature, especially in Web of Science (WOS), it was seen that many studies were conducted with the keyword “physical education teaching” (Baytur & Ulaş, 2022; Choi et al., 2020; Dinç & Özbek, 2019; Hordvik & Beni, 2024; McEvoy et al., 2015; Moen & Standal, 2016; Scanlon et al., 2024; Yıkılmaz & Alıncak, 2021). The feature that distinguishes this study from other studies is that there is no such study in Web of Science before and it offers a different perspective in the direction of the analyzes made in understanding the subject of physical education teaching. In this respect, it is important. The fact that we have covered the last 10 years in our study is due to the idea that there is more interest in current and new issues. In this context, the aim of the study is to present a general evaluation of the research conducted in the field of physical education teaching between 2013 and 2023. In this context, my research questions are as follows:

1- How is the co-author analysis in the studies on physical education teaching?

- 2- How is the distribution of studies on physical education teaching according to years?
- 3- Which authors are the most cited authors in the international literature in the studies on physical education teaching?
- 4- How is the citation status according to countries in studies on physical education teaching?

METHOD

Research Model

In this study, bibliometric analysis method, one of the quantitative research methods, was used. Bibliometric analysis uses mathematical and statistical methods to classify, evaluate, measure and rank the performance of keywords, studies, authors, journals, institutions, countries, etc. in any research field (Öztürk & Gürler, 2021).

Data Collection Tools

Web of Science database and Vosviewer program were used to collect the research data. “Physical Education Teachers” was used as the keyword. The years 2013-2023, Social Sciences Citation Index (SSCI). Emerging Sources Citation Index (ESCI) and Science Citation Index-Expanded (SCI Expanded) are included. A total of 2145 studies were analyzed in our research.

Ethical Approval

Ethical permission was obtained from “İğdır University Scientific Research and Publication Ethics Committee” with the number “E-37077861-900-139719.”

Statistical Analysis

The data were analyzed using Vosviewer, a program provided by Web of Science. This program visualizes the publications in the literature and creates heat maps showing the relationship and density of these publications. In the research, co-author analysis, author citation analysis, source citation analysis and country citation analysis were conducted.

Inclusion and Exclusion Criteria

Inclusion Criteria:

- Having research on the subject of physical education teaching,
- Availability of full texts,
- Having research published in the literature,
- Adherence to the study's objectives and research questions,
- The study's sample size and the type of methods used,
- Having been published between 2013-2023.

Exclusion Criteria:

- Off-topic studies

- Studies consisting only of thesis titles, excluding abstracts
- Studies for which only abstracts of full texts are available,
- Inaccessibility of full texts for any reason
- That only some of the full texts are available,
- That full texts are only in the form of conference proceedings or poster presentations,
- Repeated studies or studies with the same data.

RESULTS

Co-authorship Analysis

The co-author analysis shows the network of authors working collaboratively in the field of physical education teaching. According to the results of the analysis, certain authors worked together more often and shared their knowledge and experience by conducting research together. Some authors such as Richards, K. Andrew and Haerens, Leen have been identified as prominent names in this field. By emphasizing the importance of collaboration within the discipline, co-author analysis contributes to the discovery of new areas of research and the acceleration of scientific developments.

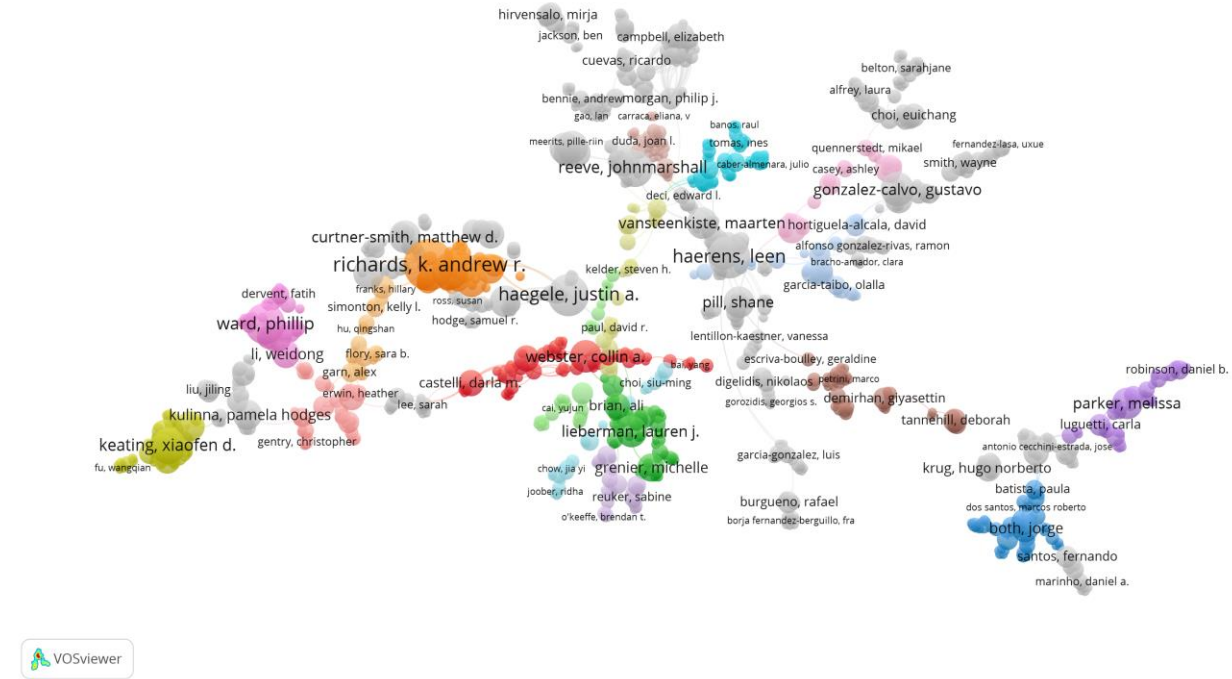


Figure 1. Co-authorship analysis

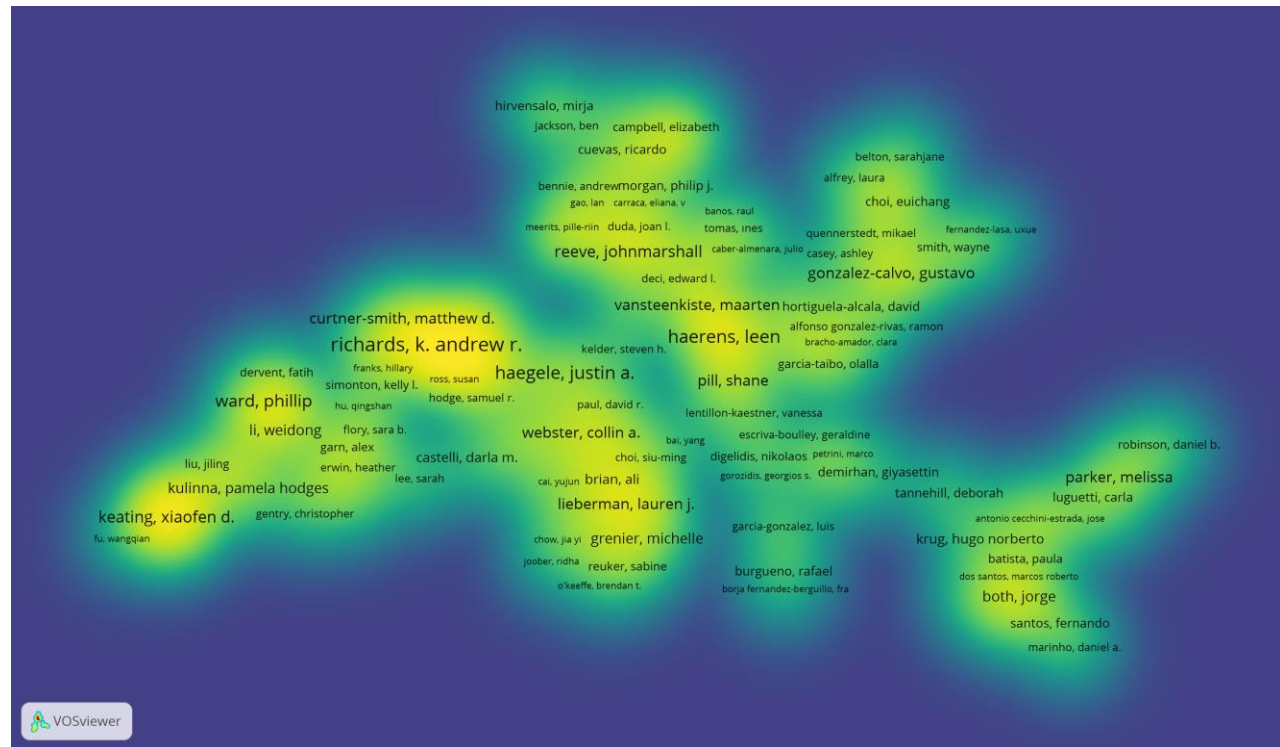


Figure 2. Co-authorship analysis heatmap

Author Citation Analysis

The first graph below shows the total number of citations of physical education teaching studies by year between 2013 and 2023. The highest number of citations was recorded in 2022, indicating that the interest in research in this area is increasing and that the work is having a significant impact. The total number of publications over the same time period is displayed in the second graph. The tendency toward an increase in publications indicates that there are an increasing number of publications.

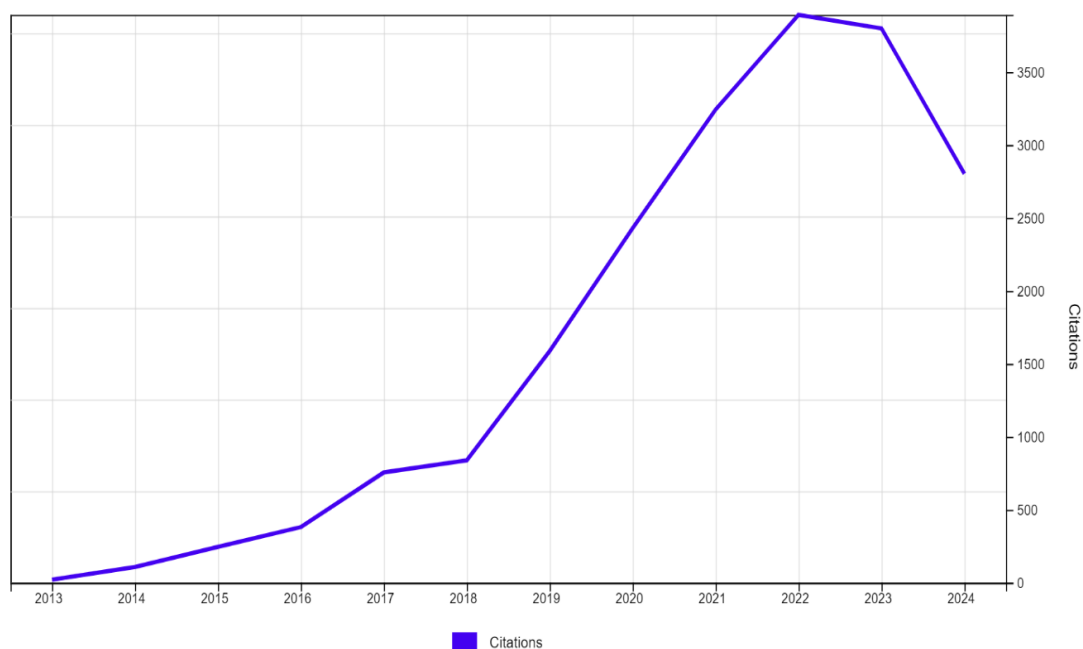


Figure 3. Author citation numbers

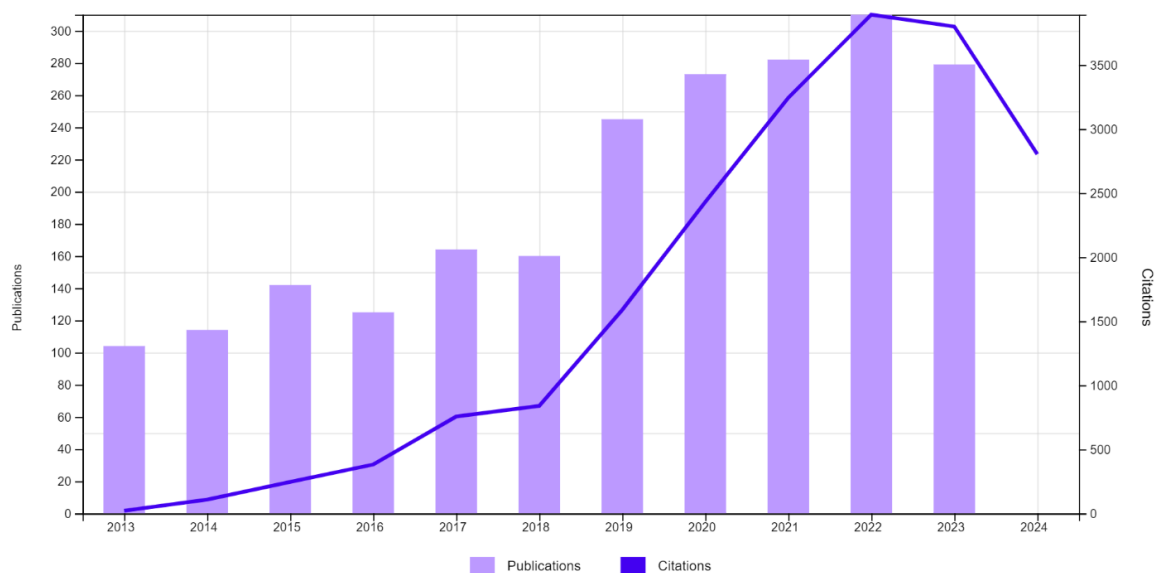


Figure 4. Citation Numbers

The results of the author citation analysis show the networks in which specific authors are cited by other authors. Some authors are cited more frequently than others, which may reflect the influence of their work within the discipline. For example, some authors, such as Pill, Shane and Vansteenkiste Maarten are among those whose work has attracted attention and citations. Author

citation analysis highlights collaboration and knowledge sharing within the discipline, showing that specific authors are influential in their research field and are followed by other researchers.

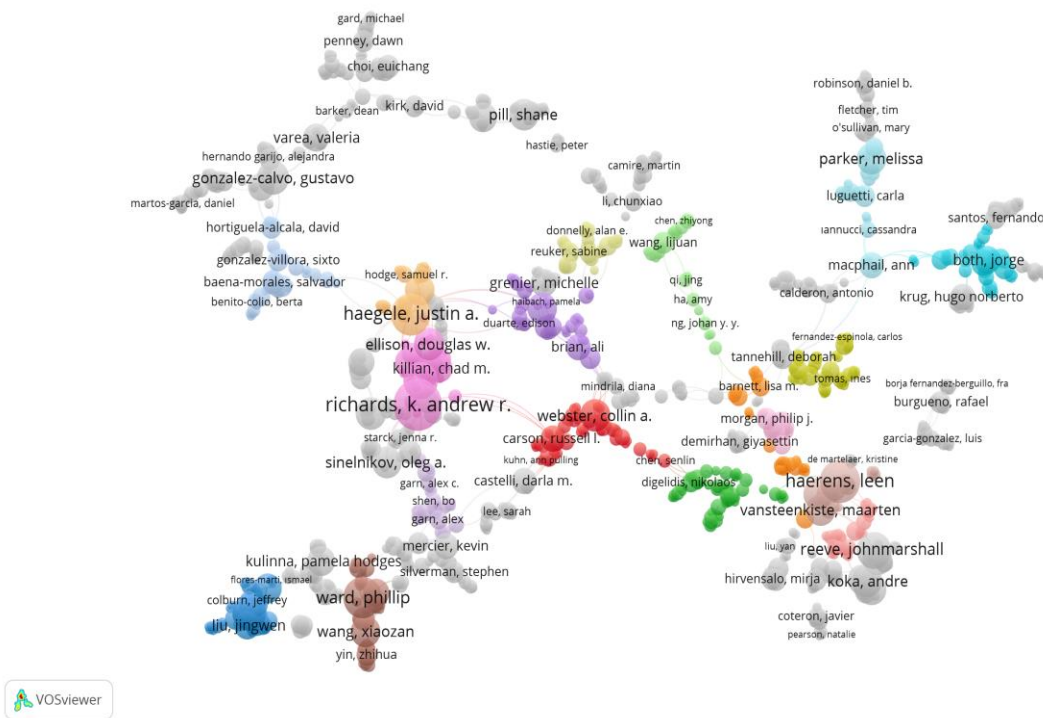


Figure 5. Author citation analysis

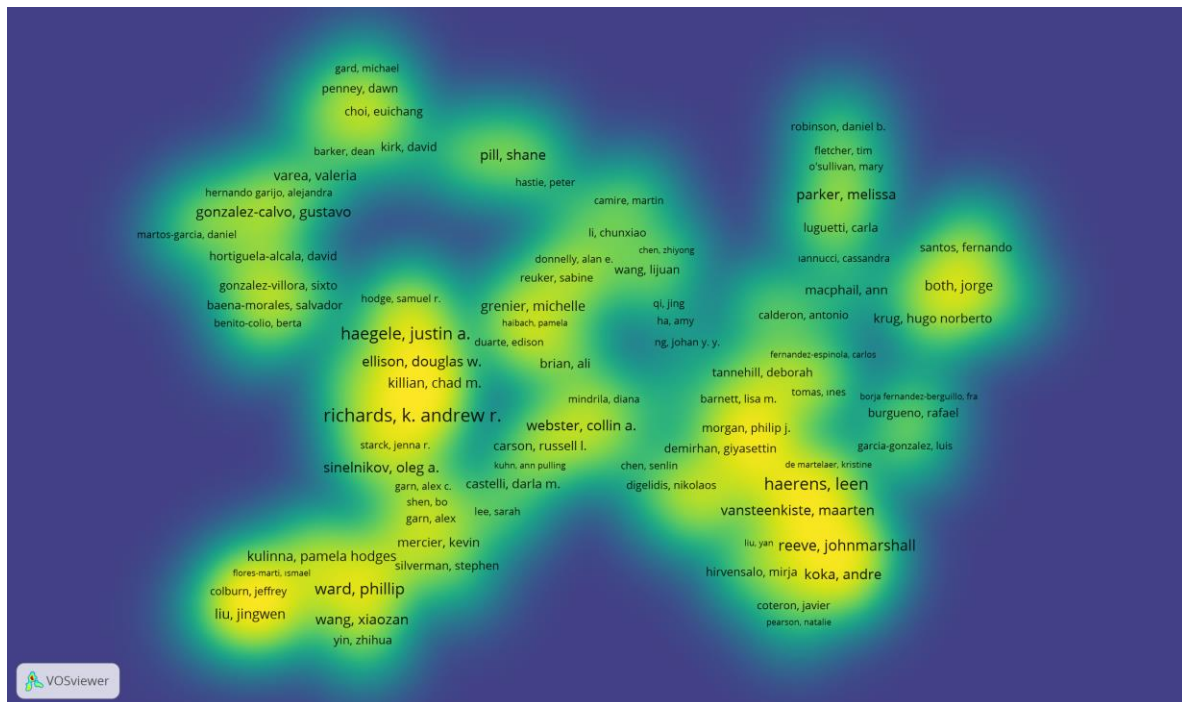


Figure 6. Author citation analysis heatmap

Source Citation Analysis

The results of the source citation analysis show the networks in which specific sources are cited by other sources. Some sources are cited more frequently than others, which may reflect their acceptance and influence in the literature. For example, some sources, such as Gonzales-Calvo, Gustavo are among those whose work has attracted attention and citations. Source citation analysis highlights the knowledge sharing and influence of sources in the literature, showing that certain sources specialize in leading issues in the discipline and are considered important by other researchers.

Table 1. Top 5 most cited sources

No	Title	Authors	Publication Date	Number of Citations
1	“Intrinsic and Extrinsic Motivation from a Self-Determination Theory Perspective: Definitions, Theory, Practices, and Future Directions”	“Ryan, Rm and Deci, El”	Apr 2020	812
2	“Toward an Integrative and Fine-Grained Insight in Motivating and Demotivating Teaching Styles: The Merits of a Circumplex Approach”	“Aelterman, N; Vansteenkiste, M; (...); Reeve, J”	Apr 2019	161
3	“Teachers' Everyday Professional Development: Mapping Informal Learning Activities, Antecedents, and Learning Outcomes”	“Kyndt, E; Gijbels, D; (...); Donche, V”	Dec 2016	145
4	“Adolescents' Perspectives on the Barriers and Facilitators of Physical Activity: A Systematic Review of Qualitative Studies”	“Martins, J; Marques, A; (...); Da Costa, Fc”	Oct 2015	160
5	“A Classroom-Based Intervention to Help Teachers Decrease Students' Amotivation”	“Cheon, Sh and Reeve, J”	Jan 2015	161

Table 1 presents the list of the 10 most cited sources between 2019 and 2023. According to this table, the most cited study is “Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions”, which received 812 citations in total. In the second place is “Toward an Integrative and Fine-Grained Insight in Motivating and Demotivating Teaching Styles: The Merits of a Circumplex Approach” published by Aelterman et al., in 2019 and received 161 citations in total. The third study is “A Classroom-Based Intervention to Help Teachers Decrease Students' Amotivation” published by Cheon and Reeve in 2015 and received 161 citations in total. These results show that the most cited study among the studies on physical education teaching between 2013-2023 is “Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions”. This study is frequently cited and discussed in this field because it deals with the issue from the perspective of “self-management theory”, which constitutes an important aspect of the studies in the field of physical education teaching. In this context, when the Source citation analysis was conducted, a cloud emerged as follows:

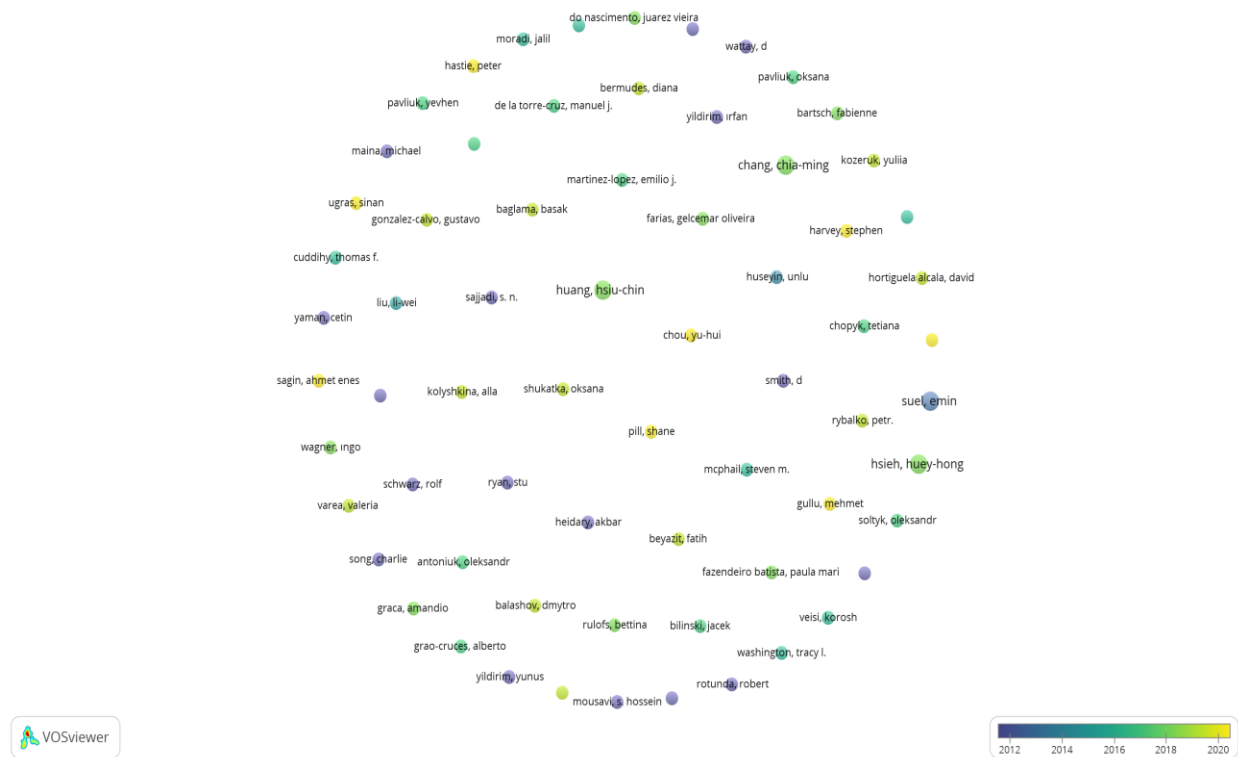


Figure 7. Source citation analysis

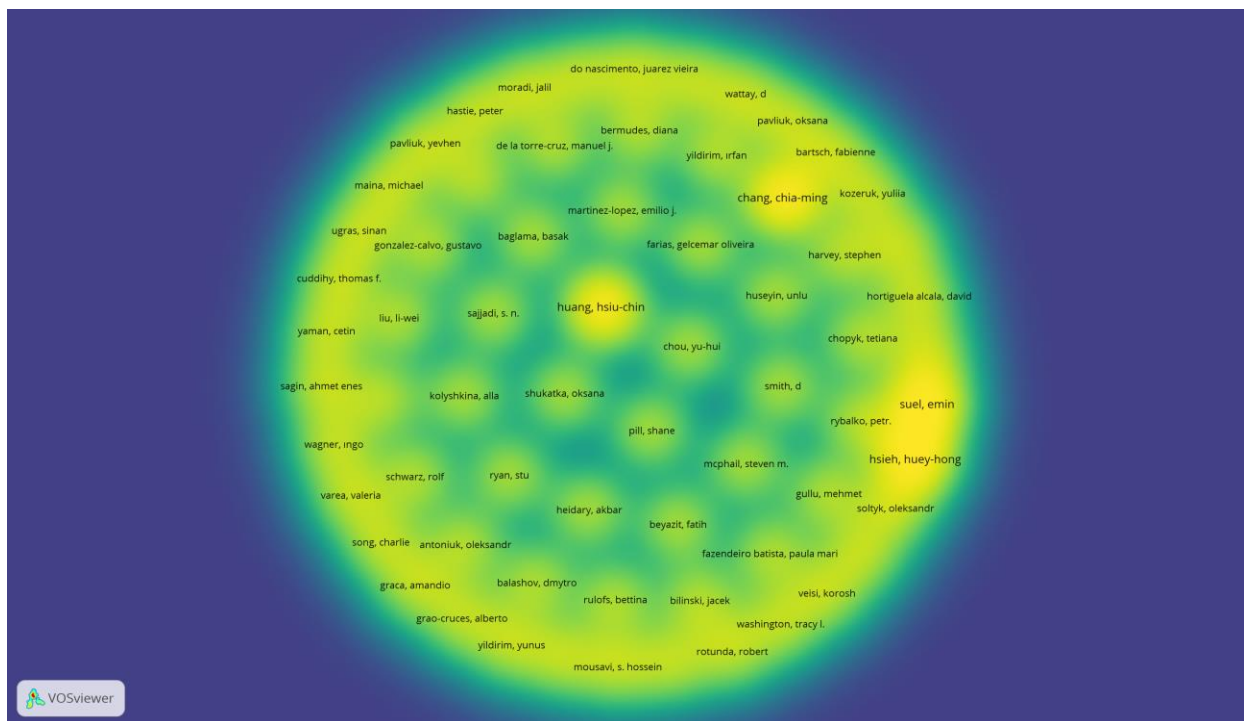


Figure 8. Source citation analysis heatmap

Country Citation Analysis

According to the results of country citation analysis, it is seen that Turkey is a cited country in the studies conducted. Turkey stands out as a frequently cited source by other countries, indicating that the work of Turkish researchers is internationally recognized and has a significant impact. Other important countries that refer to Turkey in their studies are the People's Republic of China and Poland. These countries stand out as countries that care about and reference Turkish research, which shows that Turkey has an internationally recognized position in research and academia. Turkey's relationship with these countries is important in terms of information sharing and cooperation. Among researchers and academics, studies and citations to these countries can enrich knowledge by bringing together different perspectives and scientific disciplines. In this respect, the following result emerged from the country citation analysis.



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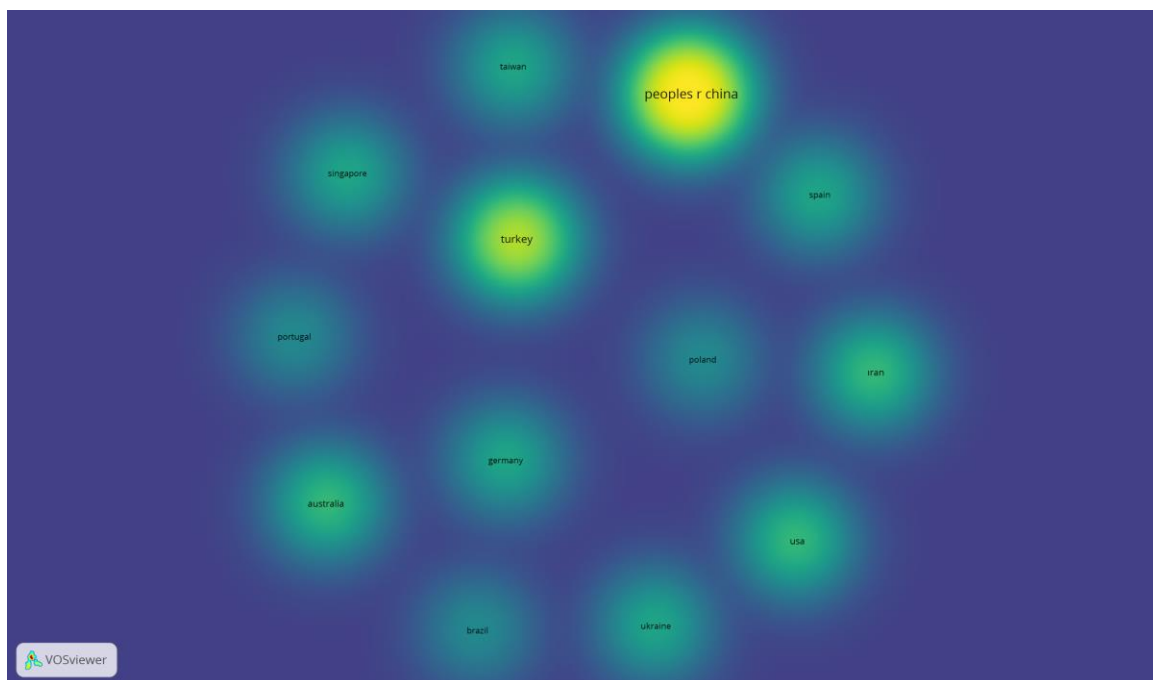


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DISCUSSION AND CONCLUSION

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When we look at the distribution of our second research question according to the years of the studies, it was determined that there has been an increase in the studies conducted with the keyword physical education teacher in recent years, and the most studies were conducted in 2022. The increase in studies on physical education teaching after the Covid 19 (WHO, 2024) outbreak that started in 2019 has revealed how important and necessary physical education is at the point of health during the epidemic.

In our third research question, the most cited authors are Pill, Shane, Vansteenkiste Maarten and Richards, K. Andrew and the most cited article is Ryan and Deci's (2020) article "Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions" has 812 citations. When we look at the data of Web of Science in 2024, it is seen that the number of citations of this study reached 1557. This result supports the conclusion of our second research question.

In our fourth and final research question, it was determined that China, USA, Germany are at the forefront in the citation ranking by countries, but Turkey does not stand out as a source frequently cited by other countries. These indicators show that the work of researchers in Turkey is internationally recognized and has a significant impact. According to Scopus data, the fact that Turkey, which ranked 22nd in the world in the production of scientific documents in 2002, (YÖK, 2024) rose to 17th place in 2022 supports this conclusion.

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Our recommendations as a result of the research are as follows.

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Citation-Based Analysis of Studies on Physical Education Teachers: A Bibliometric Study*

Osman GÜLTEN¹, Ahmet DİNÇ^{1†}

¹Iğdır University, Faculty of Sport Sciences, Iğdır, Türkiye

Original Article

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Abstract

Teaching is a profession that has been exercised since ancient times and has not lost its popularity. Knowledge has been transmitted through teaching throughout the ages. Today, teaching has become even more important due to rapidly changing information trends. This study aims to provide a general assessment of the research being carried out on teaching physical education between 2013 and 2023. In the study, foreign-language articles were searched in the Web of Science database. They were selected according to the inclusion and exclusion criteria. A total of 2145 studies were analysed. Bibliometric analysis is one of the quantitative research methods. The Vosviewer programme was used for the analyses. As a result of the search, some authors such as Richards, Kevin Andrew and Haerens, Leen are the most cited authors, the most cited studies in this area were reached in 2022, authors such as Pill, Shane and Vansteenkiste Maarten are among the most cited authors, Ryan and Deci's "Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions" by Ryan and Deci is the most cited work and Turkey is a cited country in research. It is believed that the results of this study will provide an important resource for understanding the existing literature in this area and provide a basis for future research.

Keywords: Bibliometric analysis, Citation analysis, Physical education teaching

* This article is based on a master's thesis

† **Corresponding Author:** Ahmet Dinç, **E-mail:** ahmet.dinc@igdir.edu.tr

INTRODUCTION

Profession is a field of endeavor that emerges as a result of the necessity of social life, arises from cooperation or work sharing in the execution of services in society, requires a certain education, and has social, cultural and economic dimensions (Ayas, 2009). The Ministry of National Education (MEB) defines the teaching profession as a specialized profession that undertakes the state's education, training and related administrative duties. Özbek (2008) defines physical education teaching as a field of specialization that adheres to the principles and regulations of Turkish National Education, has the field knowledge and general culture to implement the programs of the physical education course, and can work in in-school and out-of-school activities. Teachers have a direct impact on the trained manpower of the future. In this respect, it is important to pay attention to the education of teachers. In modern thinking, achieving organizational goals will be achieved through human resources (Gratton & Ghoshal, 2003). Organizations can improve and contribute to sustainable growth and performance by investing in employees' psychological capital. In this way, organizations can get ahead in the competitive race among themselves (Envick, 2005).

Teacher education has always been the subject of scientific research, as students' learning and success often depend on the competence of the teacher (MacPhail et al., 2023). Physical education teachers are also important in raising healthy individuals and athletes of the future. In this respect, a systematic analysis of the scientific literature on physical education teaching, the numerical and qualitative characteristics of the published articles, as well as the relationships and connections between these articles will highlight the deficiencies and needs in the field of physical education teaching. Our study gives us information about which countries have the most studies in the field of physical education and sport, who are the authors of the most studies, in which years more studies have been carried out and which are the most cited works. Considering these data, it is thought that leading countries, authors and works will give us important clues about which educational models and approaches they use and apply.

In the literature, especially in Web of Science (WOS), it was seen that many studies were conducted with the keyword “physical education teaching” (Baytur & Ulaş, 2022; Choi et al., 2020; Dinç & Özbek, 2019; Hordvik & Beni, 2024; McEvoy et al., 2015; Moen & Standal, 2016; Scanlon et al., 2024; Yıkılmaz & Alıncak, 2021). The feature that distinguishes this study from other studies is that there is no such study in Web of Science before and it offers a different perspective in the direction of the analyzes made in understanding the subject of physical education teaching. In this respect, it is important. The fact that we have covered the last 10 years in our study is due to the idea that there is more interest in current and new issues. In this context, the aim of the study is to present a general evaluation of the research conducted in the field of physical education teaching between 2013 and 2023. In this context, my research questions are as follows:

1- How is the co-author analysis in the studies on physical education teaching?

- 2- How is the distribution of studies on physical education teaching according to years?
- 3- Which authors are the most cited authors in the international literature in the studies on physical education teaching?
- 4- How is the citation status according to countries in studies on physical education teaching?

METHOD

Research Model

In this study, bibliometric analysis method, one of the quantitative research methods, was used. Bibliometric analysis uses mathematical and statistical methods to classify, evaluate, measure and rank the performance of keywords, studies, authors, journals, institutions, countries, etc. in any research field (Öztürk & Gürler, 2021).

Data Collection Tools

Web of Science database and Vosviewer program were used to collect the research data. “Physical Education Teachers” was used as the keyword. The years 2013-2023, Social Sciences Citation Index (SSCI). Emerging Sources Citation Index (ESCI) and Science Citation Index-Expanded (SCI Expanded) are included. A total of 2145 studies were analyzed in our research.

Ethical Approval

Ethical permission was obtained from “İğdır University Scientific Research and Publication Ethics Committee” with the number “E-37077861-900-139719.”

Statistical Analysis

The data were analyzed using Vosviewer, a program provided by Web of Science. This program visualizes the publications in the literature and creates heat maps showing the relationship and density of these publications. In the research, co-author analysis, author citation analysis, source citation analysis and country citation analysis were conducted.

Inclusion and Exclusion Criteria

Inclusion Criteria:

- Having research on the subject of physical education teaching,
- Availability of full texts,
- Having research published in the literature,
- Adherence to the study's objectives and research questions,
- The study's sample size and the type of methods used,
- Having been published between 2013-2023.

Exclusion Criteria:

- Off-topic studies

- Studies consisting only of thesis titles, excluding abstracts
- Studies for which only abstracts of full texts are available,
- Inaccessibility of full texts for any reason
- That only some of the full texts are available,
- That full texts are only in the form of conference proceedings or poster presentations,
- Repeated studies or studies with the same data.

RESULTS

Co-authorship Analysis

The co-author analysis shows the network of authors working collaboratively in the field of physical education teaching. According to the results of the analysis, certain authors worked together more often and shared their knowledge and experience by conducting research together. Some authors such as Richards, K. Andrew and Haerens, Leen have been identified as prominent names in this field. By emphasizing the importance of collaboration within the discipline, co-author analysis contributes to the discovery of new areas of research and the acceleration of scientific developments.

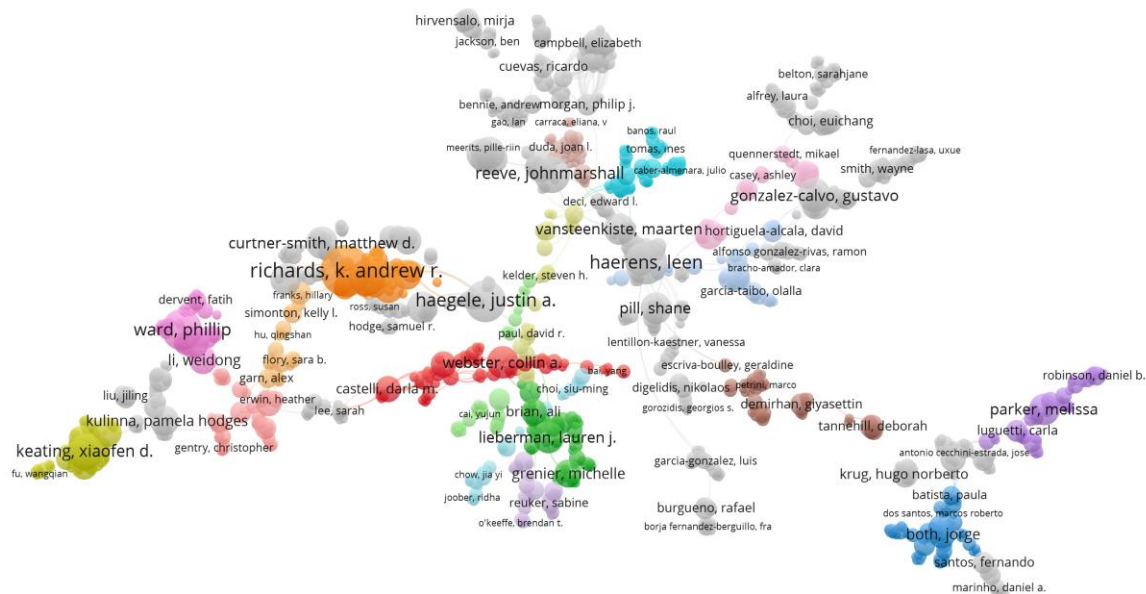


Figure 1. Co-authorship analysis

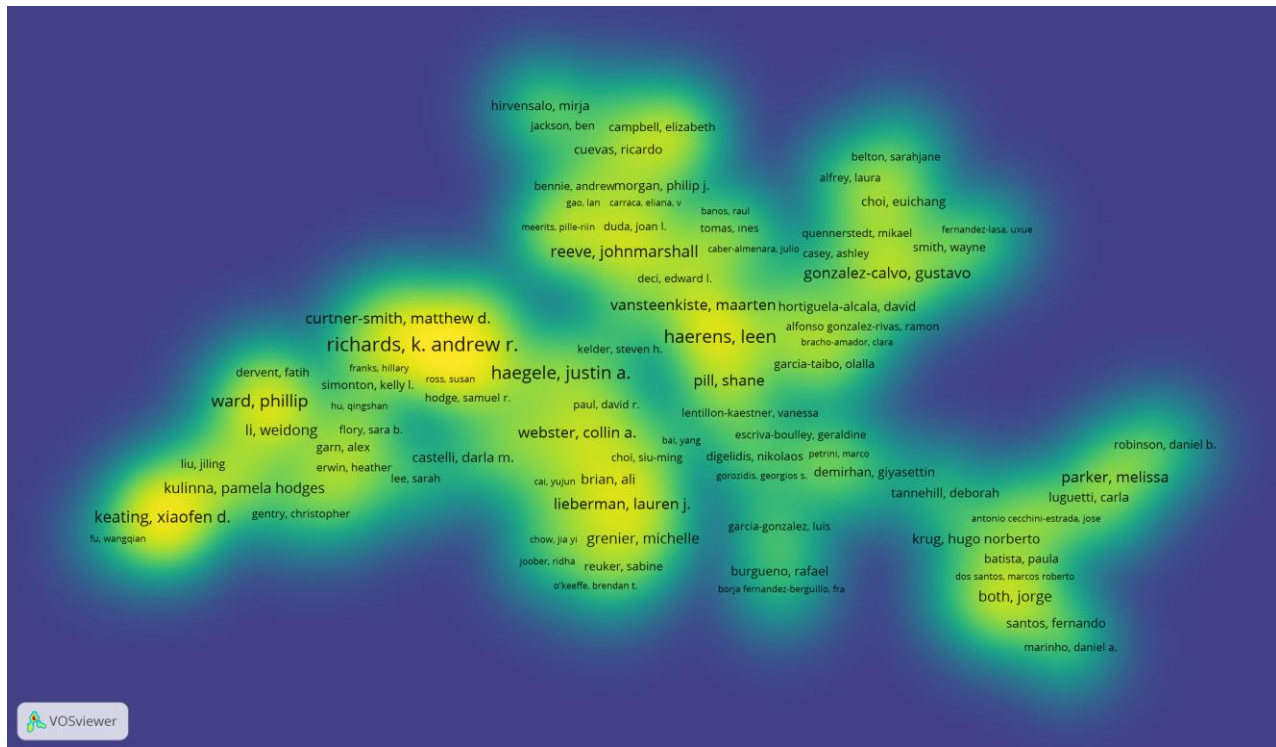


Figure 2. Co-authorship analysis heatmap

Author Citation Analysis

The first graph below shows the total number of citations of physical education teaching studies by year between 2013 and 2023. The highest number of citations was recorded in 2022, indicating that the interest in research in this area is increasing and that the work is having a significant impact. The total number of publications over the same time period is displayed in the second graph. The tendency toward an increase in publications indicates that there are an increasing number of publications.

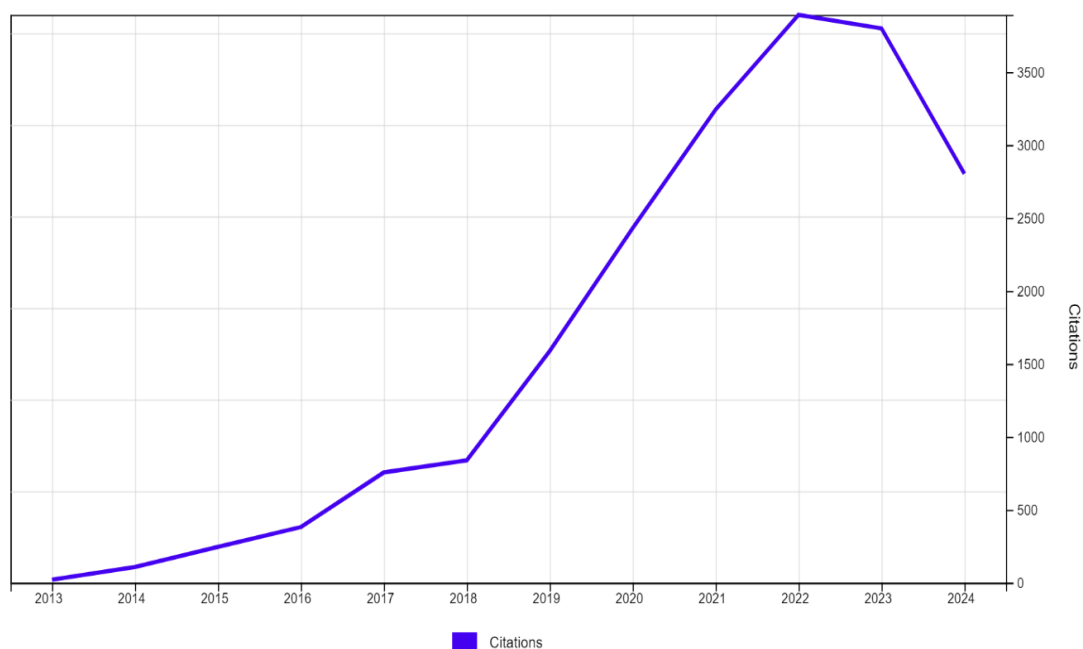


Figure 3. Author citation numbers

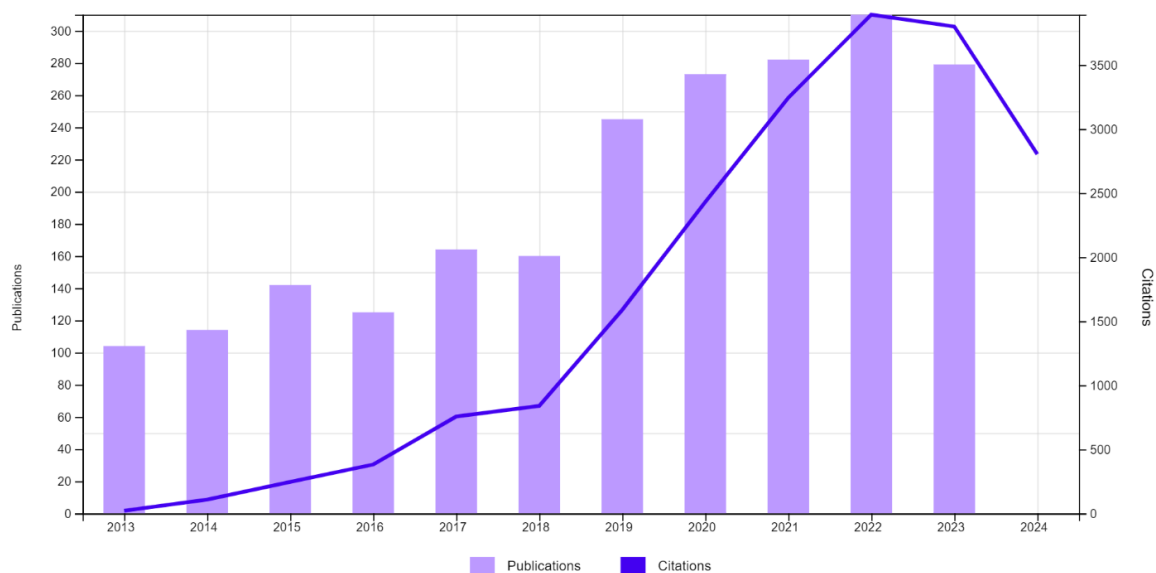


Figure 4. Citation Numbers

The results of the author citation analysis show the networks in which specific authors are cited by other authors. Some authors are cited more frequently than others, which may reflect the influence of their work within the discipline. For example, some authors, such as Pill, Shane and Vansteenkiste Maarten are among those whose work has attracted attention and citations. Author

citation analysis highlights collaboration and knowledge sharing within the discipline, showing that specific authors are influential in their research field and are followed by other researchers.

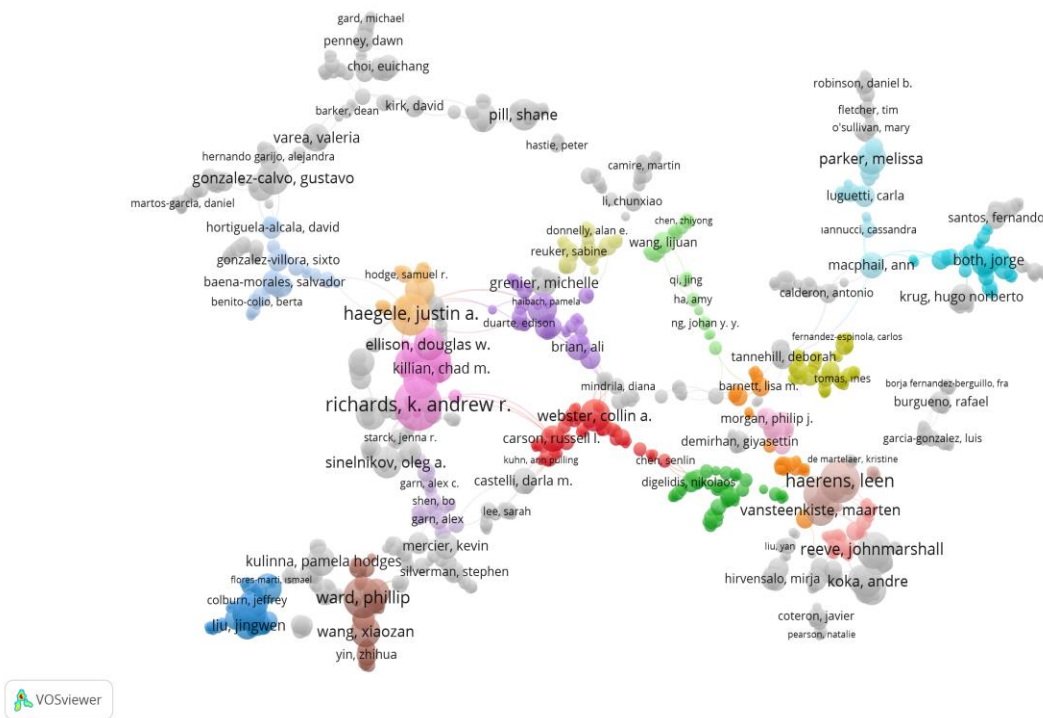


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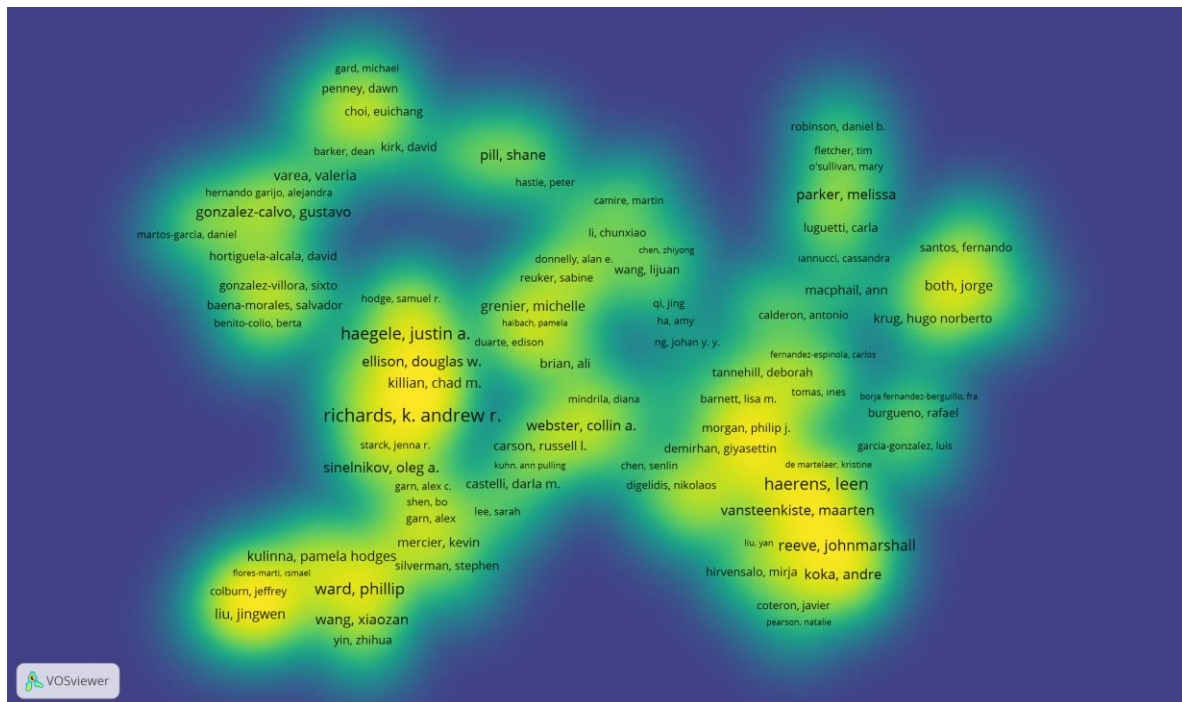


Figure 6. Author citation analysis heatmap

Source Citation Analysis

The results of the source citation analysis show the networks in which specific sources are cited by other sources. Some sources are cited more frequently than others, which may reflect their acceptance and influence in the literature. For example, some sources, such as Gonzales-Calvo, Gustavo are among those whose work has attracted attention and citations. Source citation analysis highlights the knowledge sharing and influence of sources in the literature, showing that certain sources specialize in leading issues in the discipline and are considered important by other researchers.

Table 1. Top 5 most cited sources

No	Title	Authors	Publication Date	Number of Citations
1	“Intrinsic and Extrinsic Motivation from a Self-Determination Theory Perspective: Definitions, Theory, Practices, and Future Directions”	“Ryan, Rm and Deci, El”	Apr 2020	812
2	“Toward an Integrative and Fine-Grained Insight in Motivating and Demotivating Teaching Styles: The Merits of a Circumplex Approach”	“Aelterman, N; Vansteenkiste, M; (...); Reeve, J”	Apr 2019	161
3	“Teachers' Everyday Professional Development: Mapping Informal Learning Activities, Antecedents, and Learning Outcomes”	“Kyndt, E; Gijbels, D; (...); Donche, V”	Dec 2016	145
4	“Adolescents' Perspectives on the Barriers and Facilitators of Physical Activity: A Systematic Review of Qualitative Studies”	“Martins, J; Marques, A; (...); Da Costa, Fc”	Oct 2015	160
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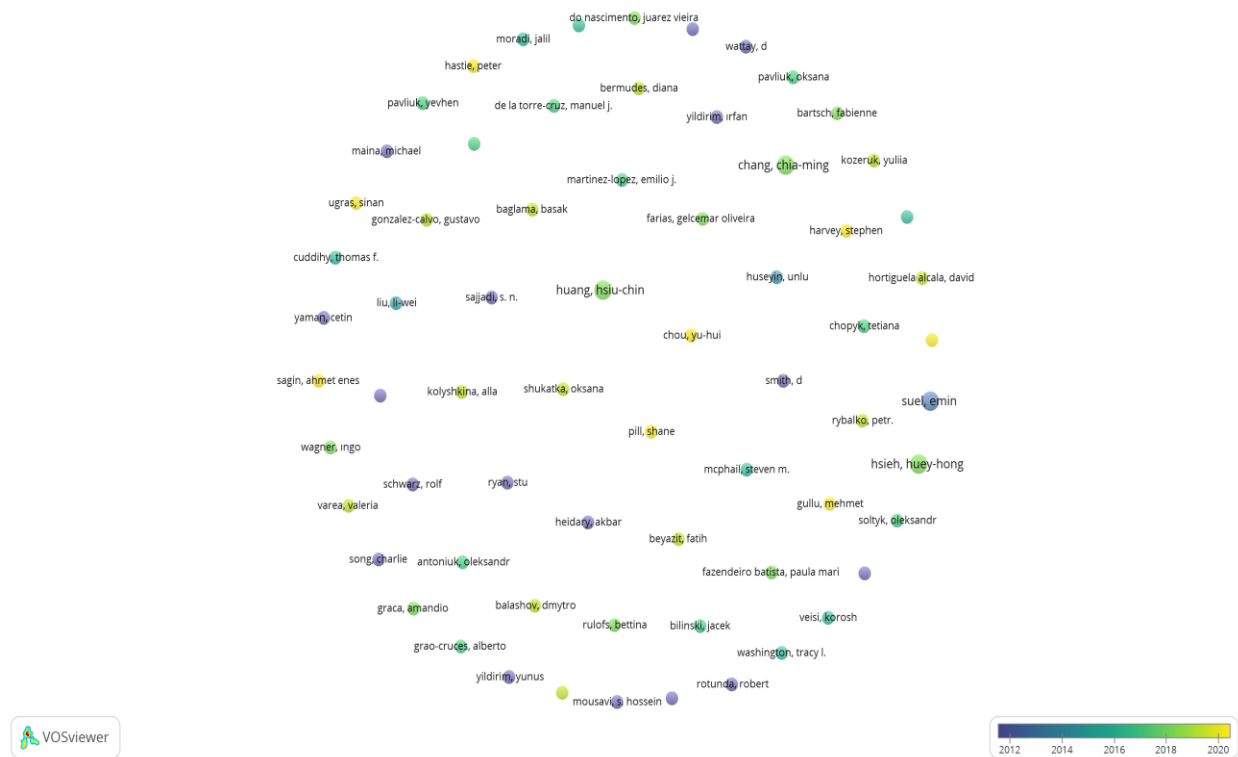


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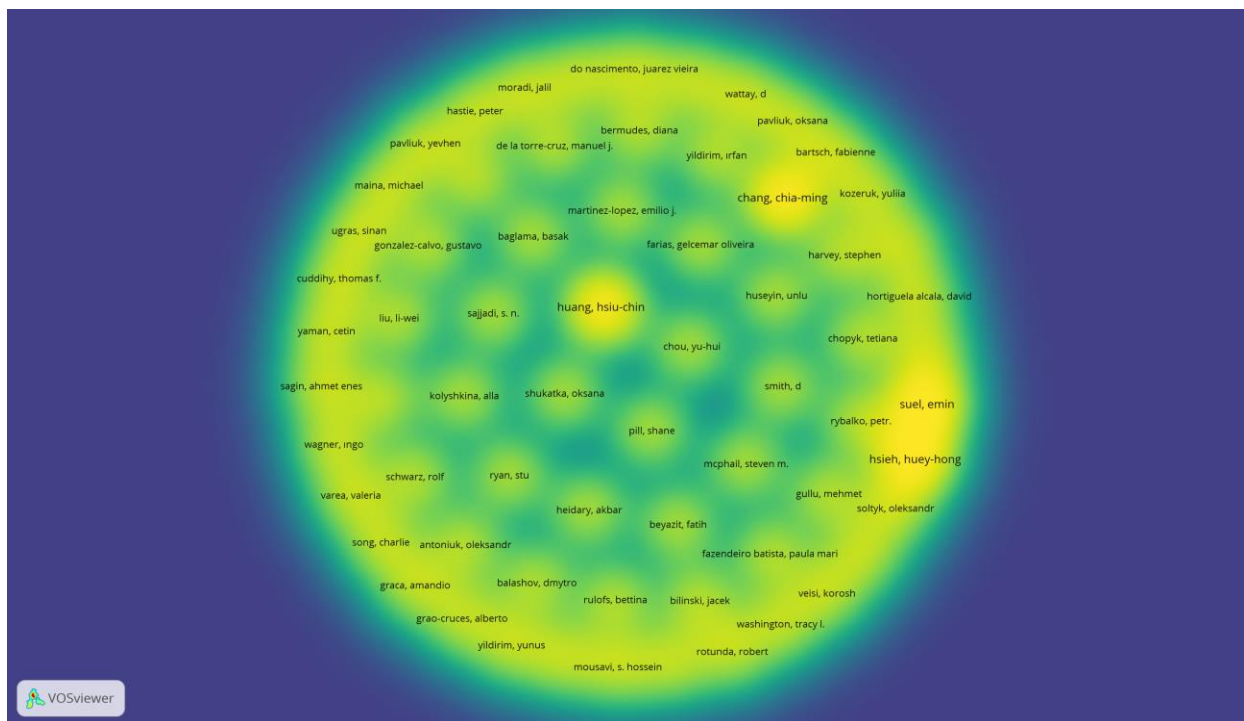


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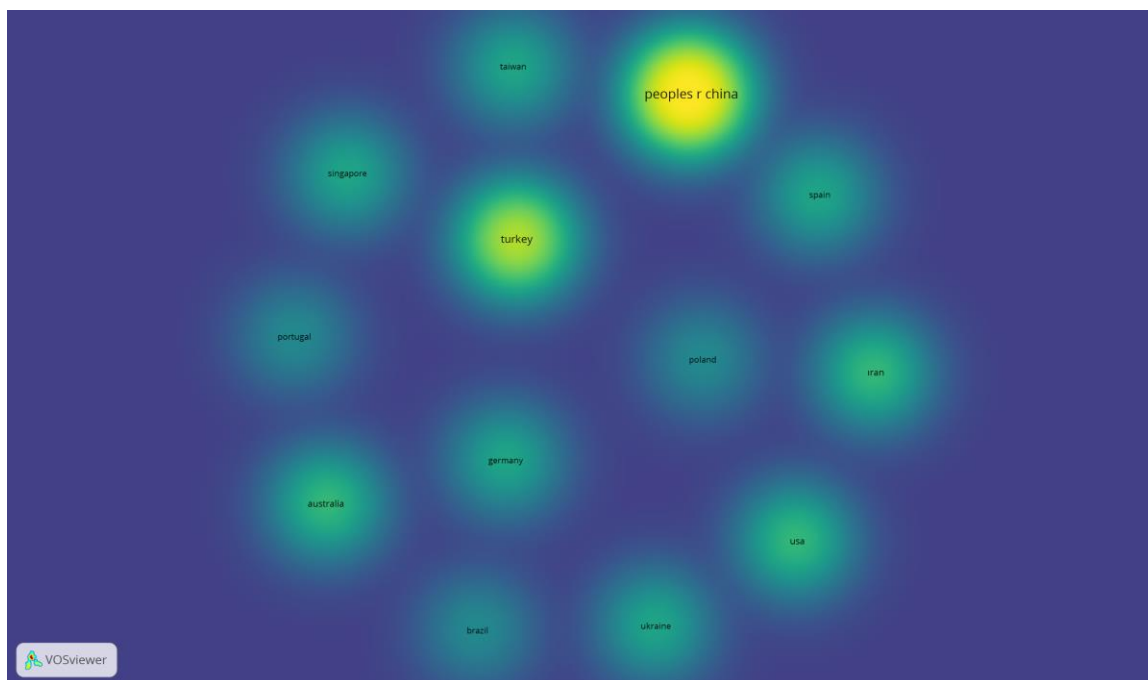


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Investigation of the Relationship between Leisure Involvement and Affect of Individuals Participating in Fitness Exercises

Mehdi DUYAN^{*} , Esmanur SELÇUK² 

¹ Inonu University, Faculty of Sport Sciences, Malatya, Türkiye

² Inonu University, Institute of Health Sciences, Malatya, Türkiye

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Abstract

The purpose of this study was to examine whether the leisure involvement of adults who participate in fitness activities has an effect on positive and negative affect. The relational screening model, one of the quantitative research methods, was used. In this study, the “*Leisure Involvement Scale*” and the “*Positive and Negative Affect State Scale*” were used. Descriptive statistics, parametric tests such as Pearson's correlation test and simple regression analysis were used to analyse the data. In addition, validity and reliability analyses were carried out to determine the validity and reliability coefficients of the scales. It was found that leisure involvement and its sub-dimensions have an effect on positive and negative affect states. As a result, it was concluded that positive emotional states increased, and negative emotional states decreased in adult individuals who participated in leisure-time fitness exercise. Therefore, it shows that it can help adults cope with the negative emotions they encounter in their daily lives (stress, anxiety, burnout, depression, lack of self-esteem, social appearance anxiety, etc.).

Keywords: Leisure time, Involvement, Positive affect, Negative affect, Fitness

^{*}Corresponding Author: Mehdi Duyan, E-mail: mehdi.duyan@inonu.edu.tr

INTRODUCTION

Individuals who want to get away from the stress and intense workload of modern life try to turn to various leisure activities in order to spend their leisure time in an enjoyable and entertaining way (Aktop & Göksel, 2023). Leisure activities; it can be expressed as the freedom to do what you want in a time period that belongs to you, whose limits and structure we determine for individual satisfaction (Tekin, 2016). Studies have shown that participation in leisure activities provides many benefits, such as physical (coronary heart disease, obesity), mental health (increased self-esteem, reduced stress and anxiety), increased social participation and self-improvement (Li et al., 2021). It has been reported that leisure-time physical activity can have an effect on psychological variables (Chen et al., 2013). Since physical exercise increases the levels of certain neurotransmitters such as serotonin, dopamine and norepinephrine, it plays an important role in improving psychological state, increasing attention, concentration and focus, reducing stress, anxiety and depression symptoms (Civan et al., 2018; Matta Mello Portugal et al., 2013; Pahlavani, 2023). According to the results of a recent meta-analysis research; it was found that individuals who participated in physical exercise had improvements in positive emotions compared to those who did not participate (Li et al., 2022). Accordingly, children and adolescents between the ages of 6-17 are recommended to participate in moderate or vigorous intensity physical activity for at least 60 minutes a day. For adults, at least 150-300 minutes of moderate intensity or 75-150 minutes of vigorous intensity is recommended per week (Heckel et al. 2023).

The concept of involvement reflects an individual's interest in an activity or related product. In this case, it is considered to be enduring because of the level of importance the individual attaches to it (Kyle & Chick, 2004). When participation in leisure activities is at a low level, the issue of "*involvement*" a significant impact on participation and continuation of activities (Gürbüz et al., 2018). Leisure involvement is defined as "*an unobservable state of motivation, arousal, or interest in a leisure activity or related product*" (Havitz & Dimanche, 1997). In particular, leisure involvement indicates that interest or motivation in leisure activities is not a short-term or temporary process but is always an important process for the individual (Kyle & Chick, 2004). Therefore, leisure involvement has an important function in clarifying the underlying reasons for leisure behaviour (Kyle & Mowen, 2005). Individuals who engage in leisure activities can develop new socialisation networks and gain knowledge, skills and experience. In this regard, it can be said that leisure involvement is a behaviour that improves the health of individuals and increases their psychological well-being (Li et al., 2019). Therefore, it also affects the level of interest in leisure activities as a result of the formation of positive and negative affect (Kocaer & Yasartürk, 2022). In the literature, emotional states are divided into two groups: *positive and negative*. *Positive affect* is expressed as enjoyment, sympathy, satisfaction, gratitude, hope, interest, joy, love, pride and desire. *Negative affect* is described as anger, contempt, disgust, shame, fear, guilt, sadness and embarrassment (Han & Patterson, 2007).

As a result of planning in such a way that individuals who participate in fitness activities will enjoy it; by keeping their leisure interest level alive, they can spend more time in fitness centres and get

continuous pleasure and enjoyment, so that benefits can be obtained from this interest (Öztürk & Alpulu, 2023). It can be said that benefits such as pleasure and enjoyment obtained from leisure activities positively affect the emotional states of individuals (Aydın, 2022). It has been found that there is an increase in the interest level of individuals who participate in fitness activities 4 to 6 days a week (Serdar, 2021). It has been reported that the weekly frequency of leisure-time exercise participation has a direct or indirect effect on positive affect (Cihan, 2022). The opportunities provided by health and fitness life centres to exercise participants and customer satisfaction are important behaviours that increase exercise participation (Dogan & Ünal, 2024). Fitness exercise can have positive effects on positive affect states such as reducing social appearance anxiety, increasing psychological well-being, self-confidence and respect, and improving social relationships. It has an important function in reducing negative affect states such as stress, anxiety, burnout and depression (Hrusova et al., 2017).

In particular, it has been suggested that positive affect plays an important role in protecting against negative responses to stress through the release of endogenous opioids (Kim & McKenzie, 2014). Participation in activities that increase positive affect is known to have an important effect on improving psychosocial health (Carruthers & Hood, 2004). It is argued that the essence of leisure experience is in the subjective sense rather than the activity. This is because experiencing leisure time is characterised by living this moment as a free choice, participating in activities that the individual enjoys and finds meaningful, since the intrinsic motivation of the individual is an important and determining factor (Iso-Ahola & Baumeister, 2023). This situation has led to the definition of hedonic (subjective well-being) and eudaimonic (psychological well-being) as basic characteristics of well-being: *Hedonic* is the attempt to achieve happiness and pleasure as the main purpose of life, striving for perfection or mobilising existing energy resources. *Eudaimonic* is the development of individual capacities in accordance with social values (Al Ashqar, 2018). A review of the literature shows that an increase in the enjoyment and pleasure derived from leisure-time physical activity leads to positive affect, whereas the opposite situation leads to negative affect and the abandonment of sporting activity (Mutz et al., 2021; Wienke & Jekauc, 2016). While a high level of involvement in leisure activities can have a positive impact on an individual's psychological well-being, it can also cause negative affect (Newman et al., 2014). Therefore, it is important to understand the processes that lead to positive and negative affect states in leisure involvement and to investigate the factors that influence psychological health.

In particular, the leisure involvement variable has been addressed with variables such as life satisfaction (Aydın, 2022; Cevik et al., 2021), leisure satisfaction (Öztürk & Alpulu, 2023), leisure barriers (Serdar, 2021), job satisfaction (Yasartürk et al., 2023), recreational flow experiences and benefits (Cihan, 2022; Demirel et al., 2022), behavioural intentions (Eskiler & Karakas, 2017), and leisure literacy (Emir, 2024). Most of the studies have focused on the frequency or variety of activities rather than the affect associated with participation in activities. Accordingly, it has been observed in the literature that there are studies examining regular exercise (Cokluk-Filazoglu, 2022), university students who are athletes and sedentary (Bozdog & Kaplan, 2021), physical

activity levels (Sahin, 2022; Yerlisu-Lapa & Haşıl-Korkmaz, 2017), and positive and negative affect.

However, when reviewing the literature, there are no studies on the positive and negative emotional states of time interests of individuals participating in leisure fitness exercise. In particular, it is important to examine the role it plays on the emotional states of adult individuals participating in leisure fitness exercise. It is believed that this will contribute to a better explanation of the relationship between leisure interest and psychological health. The aim of this study is to examine whether it has an effect on the positive and negative emotional states of adult individuals participating in fitness activities. Therefore, the following hypotheses were developed for this purpose:

H₁: There is a positive significant relationship between leisure involvement and positive affect.

H₂: There is a negative significant relationship between leisure involvement and negative affect.

H₃ : Leisure involvement has a positive and significant effect on positive affect.

H₄ : Leisure involvement has a negative and significant effect on negative affect.

METHOD

Research Model

This research was conducted using a quantitative research method, the relational screening design. The main purpose of this design is to examine the existence and degree of relationship between two or more variables (Karasar, 2009). Figure 1 shows the research model developed in accordance with our research hypotheses.

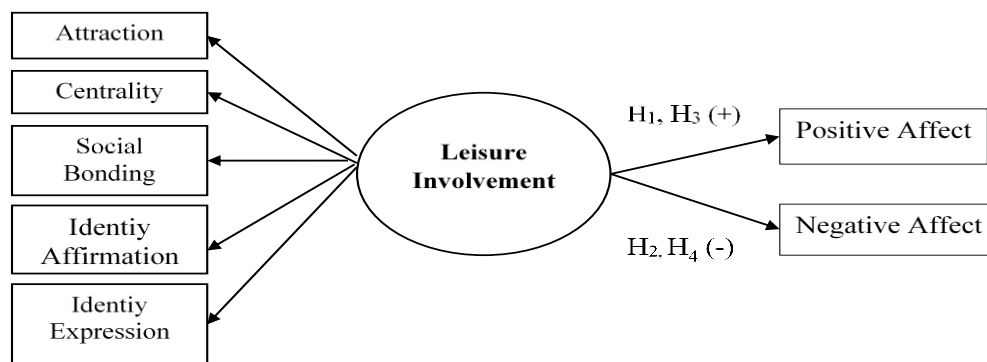


Figure 1: Research model

Research Group

Initially, this study used data collection tools on 258 people who regularly participated in fitness activities at least 3 days a week. However, during the process of testing whether the data were normally distributed, 5 data were removed from the data set due to their extreme outlier characteristics. Therefore, the sample of this study consists of a total of 253 people, 112 male and 141 female, who participate in fitness activities in Malatya.

Data Collection Tools

Leisure Involvement: This scale has been used to measure individuals' interest in leisure activities. The original version of this scale was published by Kyle et al. (2007). The adaptation study to the Turkish culture was conducted by Gürbüz et al. (2018). The scale is a 5-point Likert scale, scored between (1 - strongly disagree) and (5 - strongly agree). The scale consists of 15 items and 5 subscales. The reliability coefficient calculated in this study is 0.930 for the total scale.

Positive-Negative Affect: It was developed by Watson, Clark and Tellegen (1988) to measure positive and negative affect states of individuals. This scale has been adapted to Turkish culture by Gencöz (2000). This scale has a total of 20 items and 2 sub-dimensions. 10 of these items cover positive affect and the other 10 items cover negative affect. The scale is scored on a 5-point Likert scale ranging from (1-very little or not at all) to 5 (very much). In this study, the reliability coefficient of the positive scale is 0.894; the reliability coefficient of the negative scale is 0.868.

Ethical Approval

Ethics Committee approval (2024/12) has been obtained for the research from Inonu University Social and Human Sciences Ethics Committee.

Data Collection Procedures

The data were completed and collected face-to-face in a training environment after brief information about the research was given to the participants who had at least one year of fitness experience and accepted the study at two private fitness centres in Malatya. The collected data were processed in Excel form and then transferred to the statistical program.

Statistical Analyses

Normality analyses were first carried out to determine whether the data obtained were normally distributed. Once it was determined that the data were normally distributed, descriptive statistics, parametric tests such as correlation test and simple regression analysis were carried out. Validity and reliability analyses were also carried out to determine the validity and reliability coefficients of the scales.

Results

The arithmetic mean, standard deviation values, and kurtosis and skewness normality analyses of the variables are presented in Table 1.

Table 1. Mean, standard deviation, kurtosis and skewness normality analysis results of the variables

	Variables	N	X	S	Skewness	Kurtosis
Leisure Involvement Scale	Attraction	253	11.08	2.61	-.442	-.129
	Centrality	253	9.70	3.01	-.067	-.753
	Social bonding	253	10,21	2.67	-.387	-.264
	Identity affirmation	253	10.80	2.56	-.605	.506
	Identity expression	253	10.39	2.77	-.566	-.108
	Leisure involvement	253	52.21	11.26	-.178	-.144
Affect Status Scale	Positive Affect	253	34.60	8.13	-.280	-.201
	Negative Affect	253	19.60	7.60	.883	.537

According to the normality analysis, the data were found to have a normal distribution as the skewness and kurtosis values were assumed to meet the normality criteria of -1.5 and +1.5 (Tabachnick et al., 2013) (Table 1).

The results of the descriptive statistics are presented in Table 2.

Table 2. Descriptive statistics

	Variables	f	%
Gender	Male	112	44.3
	Female	141	55.7
	Total	253	100.0
Marital status	Married	101	39.9
	Single	152	60.1
	Total	253	100.0
Age	18-23 years old	57	22.5
	24-29 years old	102	40.3
	30-35 years old	50	19.8
	36 years and above	44	17.4
	Total	253	100.0
Education	High School	57	22.5
	Graduate	157	62.1
	Postgraduate	39	15.4
	Total	253	100.0
Profession	Public sector	129	51.0
	Private sector	52	20.6
	Housewife	30	11.9
	Student	42	16.6
	Total	253	100.0

Table 2 (Continue). Descriptive statistics

Variables		f	%
Income	25000 TL and below	57	22.5
	25001-35000 TL	45	17.8
	35001-40000 TL	34	13.4
	40001 TL and above	117	46.2
	Total	253	100.0
Weekly Exercise Frequency	At least 3 days	180	71.1
	4-5 days	51	20.2
	6-7 days	22	8.7
	Total	253	100.0
Daily Exercise Frequency	At least 30 min	127	50.2
	30-60 min	59	23.3
	60-90 min	45	17.8
	90-120 min	15	5.9
	120 minutes and above	7	2.8
	Total	253	100.0
Fitness Experience	1-2 years	97	38.3
	3-4 years	50	19.8
	5-6 years	29	11.5
	7-8 years	19	7.5
	9 years and above	58	22.9
	Total	253	100.0

According to Table 2, there are a total of 253 people taking part in fitness activities, of whom 112 (44.3%) are male and 141 (55.7%) are female. Most of the participants in the fitness activity are single (60.1%), 40.3% are between 24 and 29 years old, 62.1% have a university degree, 51% work in the public sector, 46.2% are 40001. It was observed that they have an income of TL or more. It was also found that 71.1% of them exercised at least three days a week, 50.2% exercised at least 30 minutes a day, and 38.3% had 1-2 years of experience in exercising.

Validity and Reliability Analysis for Scales

In this section, a confirmatory factor analysis was conducted to determine the structural validity of the leisure involvement scale and the positive and negative affect scales. Reliability coefficients were also computed (Table 3).

Table 3. Results of the validity and reliability of the scales

Variables	X ²	df	CMIN/DF ≤5	CFI ≥.90	TLI ≥.90	NFI ≥.90	RMSEA ≤.10	Cronbach Alpha
1 Leisure Involvement	198,794	81	2,454	.937	.918	.900	.079	0.930
2 Positive Affect	71,994	33	2,182	.965	.952	.938	.068	0.894
3 Negative Affect	95,201	28	3,400	.935	.895	.911	0.88	0.868

Note: The “acceptable” fit index is arranged in accordance with value ranges (Karadag & Gültekin, 2019; Meydan & Sesen, 2011).

According to the analysis results, the X^2/df values of the scales and the values of other indices have an acceptable fit (Karadag & Gültekin, 2019; Meydan & Sesen, 2011). The Cronbach's alpha coefficients of the leisure involvement and affect scales were found to be highly reliable (Bursal, 2017) (Table 3).

Table 4. Results of correlation analysis

Variables	1	2	3	4	5	6	7	8
1. Attraction	1							
2. Centrality	.703 **	1						
3. Social bonding	.556 **	.612 **	1					
4. Identity affirmation	.613 **	.659 **	.680 **	1				
5. Identity expression	.432 **	.529 **	.605 **	.623 **	1			
6. Leisure involvement	.799 **	.857 **	.834 **	.862 **	.774 **	1		
7. Positive Affect	.410 **	.360 **	.347 **	.378 **	.276 **	.428 **	1	
8. Negative Affect	-.246 **	-.124 *	-.132 *	-.158 *	-0.099	-.182 **	-.218 **	1

* $p < 0.05$ ** $p < 0.01$

According to the results of the analyses, there is a moderate relationship between positive affect and the attraction sub-dimension ($r = 0.410$; $p < 0.01$), centrality sub-dimension ($r = 0.360$; $p < 0.01$), social bonding sub-dimension ($r = 0.347$; $p < 0.01$), identity affirmation sub-dimension ($r = 0.378$; $p < 0.01$) and leisure involvement sub-dimension ($r = 0.428$; $p < 0.01$). A low level positive significant relationship was found with the identity expression sub-dimension ($r = 0.276$; $p < 0.01$).

According to the results of the analyses, there is a weak relationship between negative affect and the sub-dimensions of attraction ($r = -0.246$; $p < 0.01$), centrality ($r = -0.124$; $p < 0.01$), social bonding ($r = -0.132$; $p < 0.01$), identity affirmation ($r = -0.158$; $p < 0.01$) and leisure involvement ($r = -0.182$; $p < 0.01$).

Regression Analysis

From the regression analyses, it was determined that the model examining only the effect of the Identity Expression sub-dimension on negative affect was not significant (model(p)= $p > 0.05$) (Table 9). It was found that the models built on the positive and negative affect of other independent variables were significant (model(p)= $p < 0.001$; $p < 0.05$) and had a significant effect ($p < 0.001$; $p < 0.05$). In addition, it was found that the Durbin Watson scores did not have any autocorrelation problems as they were between 1.5 and 2.5. The results of the relevant analyses are presented in Table 5, Table 6, Table 7, Table 8, Table 9 and Table 10.

Table 5. Results of regression analysis between attraction and positive-negative affect

Dependent variable	Independent variable	β	SE	Beta	t	p	F	Model (p)	R ²	D.W.
Positive Affect	Attraction	1,275	0.179	0.410	7,115	0.000*	50,623	0.000*	0.165	2,114
Negative Affect		-0.716	0.178	-0.246	-4.022	0.000*	16,175	0.000*	0.057	1,697

* $p < 0.001$; DW = Durbin Watson

According to Table 5, the attraction sub-dimension explained 16.5% of the change in positive affect (*adjusted R*² = 0.165). In this situation, a 1 unit increase in the attractiveness sub-dimension results in a 1.275 unit increase in positive affect ($\beta = 1.275$). In addition, the attraction sub-dimension explains 5.7% of the change in negative affect (*adjusted R*² = 0.057). In this case, a 1 unit increase in the Attraction sub-dimension causes a -0.716 decrease in negative affect ($\beta = -0.716$).

Table 6. Results of regression analysis between centrality and positive-negative affect

Dependent variable	Independent variable	β	SE	Beta	t	p	F	Model (p)	R ²	D.W.
Positive Affect	Centrality	0.974	0.159	0.360	6,121	0.000*	37,466	0.000*	0.130	2,116
Negative Affect		-0.314	0.158	-0.124	-1.986	0.048**	3,945	0.048**	0.015	1,725

* $p < 0.001$; ** $p < 0.05$; DW = Durbin Watson

Examining Table 6, we see that centrality explains 13% of the change in positive affect (*Adjusted R*² = 0.130). Accordingly, a 1 unit increase in the centrality sub-dimension produces a 0.974 unit increase in positive affect ($\beta = 0.974$). It also shows that the importance sub-dimension explains 1.5% of the change in negative affect. Accordingly, a 1 unit increase in the centrality sub-dimension causes a -0.314 decrease in negative affect ($\beta = -0.314$).

Table 7. Results of regression analysis between social bonding and positive-negative affect

Dependent variable	Independent variable	β	SE	Beta	t	p	F	Model (p)	R ²	D.W.
Positive Affect	Social Bonding	1,056	0.180	0.347	5,867	0.000*	34,427	0.000*	0.121	2,099
Negative Affect		-0.374	0.178	-0.132	-2.102	0.037**	4,419	0.037**	0.017	1,714

* $p < 0.001$; ** $p < 0.05$; DW = Durbin Watson

According to Table 7, the social bonding sub-dimension explained 12.1% of the change in positive affect (*Adjusted R*² = 0.121). In this case, a 1 unit increase in the social bonding sub-dimension provides a 1.056 increase in positive mood ($\beta = 1.056$). It also shows that the social bonding sub-dimension explains 1.5% of the change in negative affect. Accordingly, a 1 unit increase in the social relations sub-dimension causes a -0.374 decrease in negative affect ($\beta = -0.374$).

Table 8. Results of regression analysis between identity affirmation and positive-negative affect

Dependent variable	Independent variable	β	SE	Beta	t	p	F	Model (p)	R2	D.W.
Positive Affect	Identity affirmation	1,197	0.185	0.378	6,466	0.000*	41,810	0.000*	0.143	2,139
Negative Affect		-0.467	0.185	-0.158	-2,531	0.012**	6,408	0.012**	0.025	1,741

* $p < 0.001$; ** $p < 0.05$; DW = Durbin Watson

If we look at Table 8, we can see that the sub-dimension of identity affirmation explains 14.3% of the change in positive affect ($Adjusted R^2 = 0.143$). In this case, a 1 unit increase in the identity affirmation sub-dimension results in a 1.197 increase in positive affect ($\beta = 1.197$). It also shows that the identity affirmation sub-dimension explains 2.5% of the change in negative affect. Accordingly, a 1 unit increase in the Identity Affirmation sub-dimension causes a -0.467 decrease in negative affect ($\beta = -0.467$).

Table 9. Results of regression analysis between identity expression and positive-negative affect

Dependent variable	Independent variable	β	SE	Beta	t	p	F	Model (p)	R2	D.W.
Positive Affect	Identity expression	0.809	0.178	0.276	4,552	0.000*	20,716	0.000*	0.076	2,028
Negative Affect		-0.270	0.172	-0.099	-1.572	0.117	2,470	0.117	0.010	1,694

* $p < 0.001$; DW = Durbin Watson

Of the models constructed according to Table 9, only the simple regression model indicating positive affect is significant ($F=20.716$; $p<0.001$). It was noted that the simple regression model for negative affect was not significant ($F=0.117$; $p>0.05$). It was observed that the self-expression subscale explained 7.6% of the change in positive affect ($Adjusted R^2 = 0.076$). In this case, a 1 unit increase in the self-expression subscale results in a 0.809 increase in positive affect ($\beta = 0.809$).

Table 10. Results of regression analysis between leisure involvement and positive-negative affect

Dependent variable	Independent variable	β	SE	Beta	t	p	F	Model (p)	R2	D.W.
Positive Affect	Leisure Involvement	0.309	0.041	0.428	7,507	0.000*	56,358	0.000*	0.180	2,129
Negative Affect		-0.123	0.042	-0.182	-2.931	0.004*	8,593	0.004*	0.033	1,717

* $p < 0.001$; DW = Durbin Watson

If we look at Table 10, we can see that the involvement in leisure activities explains 18% of the change in positive affect ($Adjusted R^2 = 0.180$). In this case, a 1 unit increase in leisure involvement results in a 0.309 increase in positive affect ($\beta = 0.309$). It also shows that leisure involvement explains 3.3% of the change in negative affect. Accordingly, a 1 unit increase in leisure involvement causes a -0.123 decrease in negative affect ($\beta = -0.123$).

DISCUSSION AND CONCLUSION

The purpose of this study is to determine the relationship between the leisure engagement of individuals who participate in fitness exercise and their emotional states. It is seen that leisure involvement and its sub-dimensions have an effect on positive and negative affect. It is thought that fitness centres will increase positive affect states because they are environments where they can develop new social networks and demonstrate the development of their social skills, allowing them to express themselves.

It can be hypothesised that adult individuals, in particular, identify more with fitness because they are trying to achieve an attractive physique that will make them feel better and improve their self-image. Individuals who participate in fitness activities may increase their participation in fitness activities if they receive positive feedback from their environment about a physical appearance that makes them feel good (Esentas et al., 2020). In a study conducted by Nathan, Victor and Pei Kian (2022), it was found that those who participated in fitness exercises identified with the fitness instructors because they tried to look as attractive as the fitness instructors, and their motivation to improve their social appearance and control their body weight increased their intention to participate in fitness exercises.

Establishing new social relationships, especially in the fitness exercise environment, is considered an important factor in maintaining exercise behaviour, increasing exercise engagement and enjoying exercise (Unger & Johnson, 1995). People join fitness centres not only to relax and reduce daily stressors. They also participate in fitness activities for fun and enjoyment (Heckel et al., 2023). Studies have found that individuals who participate in enjoyable activities experience more positive emotions on a daily basis and can regulate their emotions better than individuals who do not participate (Chen et al., 2022; Freire & Teixeira, 2018). According to Fredrickson's (2001) expansion and construction theory, adults who frequently participate in pleasurable activities and experience positive affect will expand their immediate thought-action skills and build their psychological resources over time. According to the theory, engaging in activities that produce positive affect eliminates the effect of negative affect, and although positive affect is generally short-lived, it leaves deep and lasting effects on individuals. It is clear that the subjective experience of positive affect states has significant implications for physical, mental and psychological health (Carruthers & Hood, 2004). It has been found that individuals who participate in leisure activities increase positive affect by strengthening their multiple psychological resources

such as autonomy, mastery, and engagement (Chen et al., 2022). Regular exercise, especially as its duration, frequency and intensity increase, has been found to have a positive effect on positive affect (Pressman et al., 2020).

It has been found that individuals' positive emotions increase as a result of their increased interest in leisure activities (Aydın, 2016). Studies have shown that participation in fitness activities increases motivation (Güzel et al., 2020) and leisure satisfaction (Dokuzoglu et al., 2023; İpekci, 2024), provides emotional and social benefits (Emir, 2020), improves self-esteem and self-compassion (Thakur & Joshi, 2016), reduces social appearance anxiety (Ayhan & Alanoglu, 2023; Duyan et al., 2022), increases psychological well-being (Ayyildiz et al., 2019; Iwon et al., 2021), and positively affects social and psychological well-being (Heckel et al., 2023). It can be said that the aforementioned research findings are parallel to our research. It has been observed that there is a consensus among studies that participation in leisure/fitness activities has a positive impact on psychological and social well-being, in addition to physical benefits. Individuals need to give importance to leisure activities in order to improve their physical and psychological processes.

It has also been stated that sports and physical activity centres should focus on high service quality in order to increase the satisfaction of individuals participating in fitness activities and maintain their continued participation (Athanassopoulou & Mylonakis, 2009; Günel & Duyan, 2020; Yildiz & Duyan, 2019; Yıldız et al., 2018). It is likely that the attractiveness of the fitness centre has an impact on the intrinsic motivation of fitness participants.

In conclusion; it can be said that the positive affect states of adult individuals who participate in fitness exercises in their leisure time increase and their negative affect states decrease. This shows that it can help adult individuals cope with the negative affect (stress, anxiety, burnout, depression, lack of self-esteem, social appearance anxiety, etc.) they encounter in their daily lives. In addition, it is seen that adult individuals who are interested in fitness activity as a leisure time activity have an important function in obtaining and increasing positive affect gains (happiness, self-confidence, psychological well-being, feeling good, etc.). Therefore, it can be said that increasing the leisure involvement levels of adult individuals plays an important role in improving their physical, mental and spiritual health against psychological symptoms such as stress, anxiety and burnout that they encounter in their daily lives.

In order to protect the health of adult individuals in later ages, it is recommended that local governments and non-governmental organizations disseminate policies and programs that will encourage leisure activities. Leisure time activities can be diversified according to the interests of children, adolescents, adults and the elderly.

The collection of data from two private fitness centres in Malatya is considered to be one of the important limitations of this research. The second important limitation is that this study on emotional states is not supported by qualitative (mixed) method in addition to quantitative method. The third important limitation is that this study, which focuses on private fitness centres, does not compare them with fitness centres operated by local governments. Therefore, this study cannot be

generalised to the whole universe. Future studies can be conducted using mixed methods, larger samples and different types of activities. In particular, it is recommended to compare indoor and outdoor leisure experiences and to investigate their effects on affect states.

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The Effect of Sports Club Employees' Levels of Emotional Intelligence and Compassionate Love on Mobbing Perceptions*

Emine KAYA[†] , Zeynep ONAÇ[‡] 

¹Manisa Celal Bayar University, The Graduate School, Manisa, Türkiye

²Manisa Celal Bayar University, Faculty of Sport Sciences, Manisa, Türkiye

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Abstract

This research aims to reveal the effect of sports club employees' emotional intelligence and compassionate love levels on mobbing perceptions. The research study group consists of 184 personnel working in sports clubs in İzmir. The survey method was used as the data collection technique of the research. A personal information form to gather personal information of the participants, "Negative Behaviours Scale" developed by Einarsen & Raknes (1997) and adapted into Turkish by Cemaloğlu (2007) to measure mobbing perception of the participants, "Emotional Intelligence Scale" developed by Schutte et al. (1998) and adapted into Turkish by Şahin (2006), and the "Compassionate Love Scale" developed by Sprecher & Fehr (2005) and adapted into Turkish by Akın & Eker (2012) were used as data collection tools. The data gathered were analysed by using a statistical program. While the emotional intelligence levels of sports club employees were found to be a significant predictor of their perceptions of mobbing, their levels of compassionate love were found to have no significant effect.

Keywords: Mobbing, Emotional intelligence, Compassionate love

Spor Kulübü Çalışanlarının Duygusal Zeka ve Duyarlı Sevgi Düzeylerinin Mobbing Algıları Üzerindeki Etkisi

Öz

Bu araştırmanın amacı, spor kulübü çalışanlarının duygusal zeka ve duyarlı sevgi düzeylerinin mobbing algılarına etkisini ortaya çıkarmaktır. Araştırmada tarama modeli kullanılmıştır. Araştırmanın çalışma grubu, İzmir ilindeki spor kulüplerinde çalışan 184 personelden oluşmaktadır. Veri toplama araçları, katılımcıların kişisel bilgilerini öğrenmek amacıyla kişisel bilgiler formu, katılımcıların mobbing algısını ölçebilmek amacıyla Einarsen & Raknes (1997) tarafından geliştirilen ve Cemaloğlu (2007) tarafından Türkçeye uyarlanan "Olumsuz Davranışlar Ölçeği", katılımcıların duygusal zeka düzeylerini belirlemek için Schutte vd. (1998) tarafından oluşturulan ve Şahin'in (2006) Türkçeye uyarlamasını yaptığı "Duygusal Zeka Ölçeği" ve Sprecher & Fehr'in (2005) geliştirdiği ve Akın & Eker'in (2012) Türkçeye uyarladıkları "Duyarlı Sevgi Ölçeği" kullanılmıştır. Araştırmanın veri toplama tekniğinde ise, anket yöntemi kullanılmıştır. Araştırma verileri istatistik programı kullanılarak analiz edilmiştir. Spor kulübü çalışanlarının duygusal zeka düzeylerinin mobbing algıları üzerinde anlamlı bir yordayıcı olduğu görülürken, duyarlı sevgi düzeylerinin önemli bir etkiye sahip olmadığı tespit edilmiştir.

Anahtar Kelimeler: Mobbing, Duygusal zeka, Duyarlı sevgi

*This study has been produced from the master's thesis prepared by the first author under the supervision of the second author.

† **Corresponding Author:** Emine KAYA, E-mail: emineky.10@gmail.com

INTRODUCTION

Individuals spend most of their daily lives in a business environment. Working individuals spend more time with their managers or colleagues than with their families, friends and loved ones. Employees will be directly affected by positive or negative situations that will occur in the working environment (Şimşek, 2013). In the studies conducted in this direction, a psychological problem originating from the workplace, the existence and extent of which was previously unknown, was discovered and this problem was named as mobbing (Leymann, 1996).

Mobbing is a situation in which one or more people perceive that they are subjected to negative behaviour by one or more people in a situation to which they are systematically and over a long period of time exposed (Matthiesen & Einarsen, 2007). Aggressive behaviours are frequently encountered in work environments and even some negative behaviours are often accepted as normal. However, if these behaviours are started to be done at certain intervals or frequently, they start to harm these people, and it can be said that these behaviours turn into mobbing (Toker-Gökçe, 2008). In short, mobbing involves a deliberate and planned process. Rather than a physical attack against the targeted person, there are unethical, hostile behaviours for his personality and reputation. The person feels vulnerable and helpless in the face of this situation. In his book, Schneider explains this as “Sticks and stones can break my bones, but words can kill my soul (Seçkin, 2017). It can be said that mobbing behaviours leave great traces on individuals. When the literature is examined, it is seen that researchers talk about the negative effects of mobbing behaviours on individuals. When individuals are exposed to mobbing behaviours, they may feel themselves at a dead end, and they may feel hopeless since they have no idea about what to do. It is even said that this despair they experience leads people to suicide. This is thought to be an indication of how serious the concept of mobbing is (Davenport et al., 2014; Gürhan, 2013; Hirigoyen, 2000; Mercanlıoğlu, 2010). At this point, the concept of emotional intelligence gains importance in reducing mobbing behaviors. Because one of the reasons that push mobbing perpetrators to psychological violence is their lack of emotional intelligence (Alparslan & Tunç, 2009). People who can manage their emotions may show the ability to find a way out despite all the negative situations they face emotion (Minibaş-Poussard & İdiğ-Çamuroğlu, 2015). Emotions were largely neglected by people in the early ages because they were thought to be irrational, primitive and dangerous (Çulha, 2022). Emotions were even thought to be a concept that harms human beings. In this direction, it is said that in order to lead a good life, reason and logic should be used, not emotions. Even if the importance of emotions was emphasised in later periods, the dominance of intelligence over emotions since the Industrial Revolution has been a fact for people that does not even need to be examined. For this reason, the idea that intelligence and reason are the solution to all problems and that emotions are an obstacle to these concepts has become settled in people's minds (Robbins, 2003). In this approach, classical intelligence and logical thinking have dominated Western society for centuries (Merlevede et al., 2006). However, emotions have an important role in understanding people's thoughts and behaviours. In recent studies, it is stated that the concept of intelligence should be expanded, and the concept of emotional intelligence should be included instead of the classically accepted cognitive intelligence. In this respect,

Salovey and Mayer were the first to mention the concept of emotional intelligence (Tuğrul, 1999). Emotional intelligence is the ability of individuals to understand their feelings and use them in a conscious way (Salovey & Mayer, 1990). In other words, emotional intelligence can be defined as the ability of individuals to observe their own and other people's emotions, to understand them, and to use them as a guide to their thoughts and actions (Çakar & Arbak, 2004). The concept of emotional intelligence helps individuals who have problems in their private lives and in their relationships with the people around them. Individuals exhibit restless behaviours in the face of problems in their relationships, and at this point, emotional intelligence is a concept that supports people to know who they are, to recognise their emotions and to use them (Soyugüzel, 2019). In short, emotional intelligence is considered to be important in understanding the behaviours of individuals and guiding their behaviours in their social lives.

One of the concepts that helps control emotions is love (Zeki, 2007). The concept of love is a universal emotion that supports the integrity and sustainability of society. Love is one of the oldest virtues experienced since the existence of people in the world (Gene, 2022). Love is a feeling that gives people peace, an emotion felt in the heart, an energy that awakens strength in people and an exchange between people. Therefore, when love is received and given, it makes people happy and enriches them (Yıldırım, 2004). While love is such an important concept, love for all humanity is also very important. At this point, the concept of compassionate love emerges. Compassionate love is a long-lasting feeling that is felt towards all humanity and requires self-sacrifice (Sprecher & Fehr, 2005). It is said that the concept of compassionate love which comes from English and is sometimes called unlimited love, is a type of love that covers all humanity with family, friends, and a close or distant community (Fehr et al., 2008). Responsive love is a set of feelings and actions that are shown in the framework of supporting and trying to understand individuals, such as caring for them, showing interest in them, or feeling a desire to support them when they are suffering (Lazarus, 1991).

Considering the relationship between the concepts of emotional intelligence and compassionate love, employees with low emotional intelligence do not care about the feelings and thoughts of people in their work environment and do not hesitate to upset other people in selfish behaviour. Employees with high emotional intelligence can increase their job performance by motivating themselves. At the same time, they help create a positive atmosphere in the environments they are in. It is an indisputable fact that emotional intelligence is important in preventing or combating mobbing behaviours (Polat, 2013). Research has shown that people with high emotional intelligence are more harmonious and balanced (Soyugüzel, 2019). When people with high emotional intelligence are faced with mobbing behaviours, they can easily understand the attacker's purpose. Without being negatively affected by this situation, he/she turns the situation in his / her favour and starts to struggle. When a person with high emotional intelligence is exposed to mobbing, he/she applies a problem-oriented coping strategy instead of applying an emotional-oriented coping strategy and accepting the situation (Güngör, 2017).

Emotional intelligence has an important role among the techniques of coping with mobbing in terms of being improvable. The management of emotions requires knowing what, why and to what extent both oneself and the other person feel and what to do in the face of which emotion (Minibaş-Poussard & İdiğ-Çamuroğlu, 2015). Being stuck in negative situations and not being able to overcome the situation quickly may cause other negativities. Therefore, individuals with high emotional intelligence who can see the glass half full tend to recover their energy even in negative situations, to be motivated to work again and to focus on higher achievements. Today, individuals working in institutional organisations may encounter situations that they do not want many times a day. If it is not easy to get rid of the mood caused by these negative situations, there may be dramatic low productivity (Çalık, 2021).

In addition to all these, emotional intelligence was thought to be a solution to various problems, ranging from bullying to the participation of employees in schools. However, it has been revealed that emotional intelligence, like traditional intelligence, can be used for both ethical and unethical purposes. Researchers have stated that some people with high emotional intelligence use their skills to selfishly influence or manipulate others (Bariso, 2019). One of the most important universal values in reducing these problems or conflicts in inter-individual relations is seen as the “love” value (Önlen, 2017). Where there is no love, there is grudge, hatred and hostility. The primary source of unity, social peace, brotherhood and happiness is love (Demirkol, 2015). As a result of all these studies, it is possible to say that the importance of emotional intelligence and sensitive love is inevitable in preventing mobbing behaviors to some extent and in managing the perceptions formed regarding this concept. In this context, it is thought that this study will be one of the pioneering studies in preventing mobbing behaviours that may occur in sports clubs or reducing these existing behaviours by investigating whether the emotional intelligence and love levels of employees in sports clubs affect mobbing perceptions.

Problem of the Research:

Do emotional intelligence and sensitive love levels have an effect on sports club employees' perceptions of mobbing?

METHOD

Research Model

In this study, the quantitative research method was used. In this direction, descriptive and relational screening model was used. The independent variable (emotional intelligence and sensitive love) and dependent variable (mobbing) were determined in accordance with the model of this research which aims to evaluate the effect of emotional intelligence and compassionate love levels on mobbing.

Research Group

The study group of the research consists of 184 personnel, 69 women and 115 men, working in 13 public and private sports clubs in the central districts of Izmir in 2022-2023, selected by purposive sampling method. In order to determine the appropriate sample for the research, the required sample size was stated as 165 to work with a sampling error of 5% in a universe of 500 people (Yazıcıoğlu & Erdoğan, 2004). In this direction, 184 people represent the universe of the research. Sports club employees were categorised into 3 groups as technical team (coach, trainer, technical officer, assistant coach), administrator (manager, coordinator) and administrative staff (administrative affairs officer, financial affairs, media).

Data Collection Tools

Data collection tools consist of 4 sections. In the first part, there is a "Personal Information Form". In the second section, the second part constitutes the "*NAQ - Negative Acts Questionnaire*" developed by Einarsen & Raknes (1997) and translated into Turkish by Cemaloğlu (2007). This data collection tool, which measures exposure to various negative behaviours, consists of 21 items. The reliability coefficient was calculated as $\alpha=0.904$.

In the third section, the "*Emotional Intelligence Scale*" developed by Schutte et al., (1998) and adapted into Turkish by Şahin (2006) was used. The scale consists of 33, 5-point Likert type, items. The reliability coefficient was calculated as $\alpha=0.922$.

In the last part of the study, the "*Compassionate Love Scale*" consisting of 21 items, developed by Sprecher & Fehr (2005) and adapted into Turkish by Akın & Eker (2012) was used. The reliability coefficient was calculated as $\alpha=0.890$.

Ethical Approval

During the current research, the "Scientific Research and Publication Ethics of Higher Education Institutions Regulation" was followed. In order to obtain the data, approval was obtained from the Manisa Celal Bayar University Social and Human Sciences Research and Publication Ethics Committee that the research was ethically appropriate (30.12.2022 date and decision number 2022/11-10). Afterwards, the necessary permissions were obtained from the sports clubs in Izmir and the surveys were applied.

Analysis of Data

Within the scope of the research, 215 individuals who voluntarily agreed to participate in the research were reached. However, the data of 24 people were excluded from the study due to missing data and the data of 7 people were excluded due to the extreme Z value. For this reason, the data were analysed with 184 sports club employees. The data obtained from the study were analyzed using the SPSS (Statistical Package for Social Sciences) 22 statistical program. Descriptive statistical methods (number, percentage, mean, standard deviation) were used when evaluating the data. Whether the data were normally distributed was measured by performing normality tests. In this direction, Skewness and Kurtosis values were taken into account.

Table 1. Normality Distribution of Scales and Dimensions Averages

	Min.	Max.	X	S	Skewness	Kurtosis
Mobbing scale	1,00	2,81	1,36	0,38	1,448	1,884
Emotional intelligence scale	2,85	5,00	3,997	0,38	-,031	,180
Compassionate Love Scale	1,62	5,00	3,70	0,60	-,068	,202

When the results of the normality test performed in Table 1 are examined, it is seen that the skewness values are between -.031/1.448 and the kurtosis values are between .180/1.884. George & Mallery (2010) stated that the reference values should be between +2.0 and -2.0. Accordingly, parametric tests were performed for values showing normal distribution.

RESULTS

Table 2. Demographic information of the participants

Variables	Groups	N	%	Total	\bar{x}	S	Min.	Max.
Gender	Female	69	37,5	184	37,16	9,53	18	64
	Male	115	62,5					
Marital status	Single	93	50,5					
	Married	91	49,5					
Educational status	High school	53	28,8					
	Licence	115	62,5					
	Undergraduate	16	8,7					
Duty in the club	Technical crew	81	44,0					
	Administrator	21	11,4					
	Administrative	82	44,6					
	Staff							
Age		184	100,0		5,91	5,55	1	30
Working time in the club		184	100,0					

As seen in Table 2, 62.5% of the participants are male and 37.5% are female. Of the sports club employees who participated in the study, 50.5% were single and 49.5% were married. Considering the educational status of the participants, it was determined that 62,5% of them were undergraduate, 28,8% were high school and 8,7% were postgraduate. According to the table,

44.6% of the participants were administrative staff, 44% were from the technical team and 11.4% were managers. The average age of the participants was found to be $37,16 \pm 9,53$. When the participants' working time in the club is analysed, it is seen that it is $5,91 \pm 5,55$.

Table 3. Pearson correlation analysis results according to the mobbing scale, emotional intelligence scale and compassionate love scale

		1	2	3
1- Mobbing scale	r	1	-,161*	,034
	p		,029	,651
2-Emotional intelligence scale	r		1	,466**
	p			,000
3- Compassionate Love Scale	r			1
	p			

(p<,05)

When the correlation analysis results were examined, a low-level negative correlation was found between the mobbing scale score and the emotional intelligence scale score ($r=-,161$; $p<,05$). No significant correlation was found between the mobbing scale score and the compassionate love scale score ($r=,034$; $p>,05$). There was a moderate positive relationship between the emotional intelligence scale score and the compassionate love scale score ($r=,466$; $p<,05$).

Table 4. Multiple regression analysis results for mobbing scale total score

Variables	B	S.S	β	t	p	r	R	Tolerance	VIF
Constant	1,945	,297	-	6,545	,000	-	-	-	-
Emotional intelligence	-,227	,083	-,225	-2,740	,007	-,161	-,200	,783	1,278
Compassionate Love	,088	,052	,139	1,686	,094	,034	,124	,783	1,278
R= 0.202; R²= 0.041									
F (2,181) = 3,860 p= 0.023									

Emotional intelligence and compassionate love variables show a low level significant negative relationship with mobbing ($R=0.202$, $R^2=0.04$, $p<,05$). Emotional intelligence scale score and compassionate love scale score explain about 4% of the variance of the mobbing scale score. According to the standardised regression coefficient (β), the relative importance of the predictor variables on mobbing is emotional intelligence and compassionate love. When the t-test results regarding the significance of the regression coefficient are analysed, it is seen that only the emotional intelligence variable is a significant negative predictor of mobbing. Compassionate love does not have a significant effect.

DISCUSSION AND CONCLUSION

In this study, which aims to examine the effect of emotional intelligence and compassionate love levels of sports club employees on mobbing perceptions, when the demographic information of the participants was examined, it was seen that 62.5% of the participants were male and 37.5% were female. Regarding the marital status variable, it was concluded that 50.5% were single and 49.5% were married. It was determined that 62,5% of the participants were undergraduate, 28,8% were high school and 8,7% were postgraduate. When the duties of the sports club employees in the club are examined, it is seen that 44,6% of them are administrative staff, 44% are from the technical team and 11,6% are administrators. The average age of the participants was determined as $37,16 \pm 9,53$. Finally, when the distribution of the working time of the sports club employees in the club is analysed, it is seen that it is $5,91 \pm 5,55$.

According to the research findings, it is seen that the level of compassionate love of sports club employees does not have a statistically significant effect on mobbing perception. However, when the relationship analysis was examined, a moderate positive relationship was found between emotional intelligence levels and compassionate love levels. In this context, it is reasonable to say that when the emotional intelligence levels of the participants increase, their compassionate love levels will also increase. This is because sensitive love consists of positive behaviours towards strangers on a voluntary basis, including social assistance behaviour towards the whole society and close people (Demirel, 2019). Accordingly, compassionate love is a series of feelings and actions shown within the framework of supporting and trying to understand individuals, such as valuing individuals, showing interest, or feeling the desire to support them when they suffer (Lazarus, 1991).

It is seen that the emotional intelligence levels of sports club employees are a significant predictor of their perceptions of mobbing. However, when the relationship table (Table 3) is reviewed, it is seen that there is a negative relationship between mobbing and emotional intelligence. In other words, it can be said that the mobbing perceptions of sports club employees will decrease as their emotional intelligence levels increase. Parallel to this study, Kayabaşı (2019), in his study with school psychological counsellors, concluded that there was a negative low-level relationship between the participants' mobbing perceptions and emotional intelligence levels. He stated that emotional intelligence acts as a protective shield against mobbing perception of the participants due to its structure. Makkar & Basu (2018), in a study conducted with employees in the banking sector in India, found that there was a negative relationship between mobbing perceptions and emotional intelligence levels. Similarly, Çelik (2015) concluded that there is a significant negative relationship between mobbing perceptions and emotional intelligence levels of primary school teachers.

Individuals with high emotional intelligence can be said to be more advantageous in controlling themselves and their relationships with other people. Such people appear as harmonious people who know their responsibilities and fulfil their promises and duties. Therefore, mobbing

behaviours can be prevented in an organisation where there are superiors and subordinates with emotional intelligence (Koç & Bulut, 2009). People with high emotional intelligence do not hesitate to share the situation with other people around them in case they encounter mobbing behaviours because they are social people with good relationships with others. In addition, these people can take a firm stance against the mobbing practitioner and in the face of this situation, they can intimidate the mobbing practitioner and make them take a step back (Gün, 2009). Even, individuals with high emotional intelligence are more tolerant when they are exposed to mobbing behaviours or similar aggressive behaviours (Güllüce, 2010). In addition, employees with high emotional intelligence improve their job performance by motivating themselves and contributing to the creation of a positive environment in the organisation. It is also possible to say that the importance of emotional intelligence is an indisputable fact in preventing or coping with mobbing behaviours (Polat, 2013).

As a result, emotional intelligence levels appear to be a significant predictor of mobbing perceptions, while compassionate love levels do not appear to have a significant effect. In this respect, it is possible to say that the level of mobbing will decrease as emotional intelligence increases. It is suggested that sports club employees should be provided with opportunities to develop their emotional intelligence in order to reduce mobbing, which is considered as a destructive effect for organisations. It is also recommended that questions be asked to measure the emotional intelligence levels of individuals in job interviews. This research only covers employees of sports clubs in Izmir. Other research can be conducted in different cities of Turkey. The sample size can be expanded to reach more participants. The research can be examined using other research methods such as qualitative research method or mixed research method.

Conflict of Interest: There are no personal or financial conflicts of interest among the authors regarding the scope of the study.

Authors' Contribution: Study Design–EK, ZO; Data Collection– EK; Statistical analysis– EK, ZO; Manuscript Preparation– EK, ZO

Ethical Approval

Ethics Committee: Rectorate of Manisa Celal Bayar University, Social and Human Sciences Scientific Research and Publication Ethics Board

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An Examination of the Attention and Psychological Skill Levels of Combat Athletes

Halil GÜLSOY*¹ , Süleyman Erim ERHAN¹ 

¹ Tekirdağ Namık Kemal University, Tekirdağ, Turkey

Original Article

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Abstract

The problem statement of the research is to examine whether there is any difference between the selected martial arts branches and attention levels and psychological skill levels. Also, there is a significant difference between gender and psychological skill and attention. The aim of this research is to examine the relationship between the psychological skills and attention levels of athletes involved in four different branches of combat sports (Boxing, Kickboxing, Muay Thai, and Taekwondo). A total of 85 athletes participated in the study, consisting of 52 males and 33 females. As data collection tools, a personal information form, the d2 Test of attention, and scale for evaluating athletes' psychological skills were used. To compare the data, the Independent Samples T-Test was applied for binary groups, and the One-Way ANOVA test was applied for groups of three or more. To determine which groups showed significant differences as a result of the One-Way ANOVA test, Tukey's Post Hoc test was used. At the end of the study, the richness and differences of Muay Thai among combat sports have been brought to the literature.

Keywords: Combat sports, Muay Thai, Attention, Psychological skill

*Corresponding Author: Halil GÜLSOY, E-mail: halilgulsoy.59@gmail.com

INTRODUCTION

Nowadays, sports have transformed from traditional to modern and have become highly professionalized. This professionalism has been achieved primarily through athletes internalizing their respective disciplines and progressing with the guidance of science. When we delve into the root of the matter, it is evident that what individuals experience in their inner world significantly affects the quality of sports. This inner world possesses a universe so vast that it cannot be confined. However, it gives rise to a general concept that we can express as psychological skills, which fundamentally include concepts like pressure, stress, and fear.

Psychological skills are factors that enable the manifestation of talents, increase motivation, and ensure the athlete's success. These factors include goal setting, imagery, self-talk, motivational speech, altering the direction of thoughts, autogenic training, progressive relaxation techniques, and elements such as fear and stress, all of which exist through their visualization in the mind. The convergence of all these factors, coming together to create motivation, forms psychological skills (Erhan et al., 2015). Although athletes strive to improve their physical factors such as strength, balance, and agility to achieve excellence in performance, they must do so within a framework of intense concentration. In fact, we can assume that psychological skills and attention are the true subjects in the development of such excellent performance. Regardless of the sport, attention is of paramount importance. For an individual to achieve the desired performance, focus is essential. Perfect focus can only be achieved with equally perfect attention.

Attention is a function of the nervous system that allows us to focus only on the stimuli relevant to our current needs and goals amidst numerous other stimuli (Yayci, 2007). It refers to the selective and active element in our perceptions (Korkmaz, 2000). Attention, being a part of daily life, is a cognitive process that humans must use in every aspect of their lives. Any task performed without proper attention will inevitably be incomplete and flawed. For athletes to perfectly and completely perform the skills they aim for, they must intensify their focus and aim to perform at the highest level of attention (Güllü, 2012). For instance, if an archer experiencing attention deficit cannot focus adequately on the target, they may struggle to achieve the necessary concentration. No matter how fit they are in terms of muscle strength, weight, or height, if they cannot integrate this physically and cognitively, the likelihood of failure is high (Tiryaki, 2000). Generally, during training, athletes and coaches prioritize physical skills while neglecting or failing to equally develop psychological skills, leading to significant performance losses for the athlete. As a result, there is a direct decline in sports success. Additionally, athletes and coaches should improve their psychological skills and attention levels, conduct regular tests, and ensure continuous practice.

Combat sports are a field that continues to be prevalent and popular today. This can be attributed to numerous reasons. Combat sports are highly complex, encompassing a variety of skills, including balance, strength, speed, agility, reflexes, focus, strategy, and tactics, among others.

Moreover, the intense and multifaceted training in combat sports results in high levels of calorie expenditure (Kimmel & Rogler, 2018). In addition to improving physical endurance, strategic thinking, and technical skills, combat sports offer several advantages that positively affect mental health. They primarily involve the learning process of discipline and self-control. Athletes enhance their problem-solving skills when facing crises and challenges during training and competitions, while also improving their ability to cope with stress and maintain emotional balance. This improvement helps them better withstand the stresses and pressures of daily life (Weiser et al., 1995). Combat sports also boost self-esteem and confidence. Dealing with challenges encountered during training increases athletes' confidence in their abilities. Observing their achievements and development has a positive impact on mental health. Furthermore, combat sports strengthen social bonds. Team training or group activities and competitions in gyms support social relationships, expanding emotional support networks. Although combat sports may seem individual, they are, in fact, a team effort with a significant psychological component (Theeboom, 2009). Combat sports positively affect both physical and mental health. Gains such as discipline, self-control, self-esteem, and social bonds help athletes lead healthier and more balanced lives. Therefore, combat sports play an important role as a lifestyle choice that strengthens both the body and the mind (Emru-Tadesee, 2017).

Although psychological skills are compatible with sports, psychological skills and attention are equally important. An excellent athlete must first have solid psychological skills, and this is actually possible with attention and concentration. No matter how careful the athlete is, if his psychological skills are low, he will either fail or have difficulty fully achieving the desired success. For this reason, psychological skills and attention and sports appear as an inseparable whole. This triangular structure is an indispensable key for athletes to achieve great success.

When reviewing the professional literature, it is evident that increasing the athlete's attention is a necessity for superior performance. To improve attention, one must focus on a goal, and attention exercises together with sports raise concentration and performance to a higher level (Gallahue, 1982).

The main aim of our study is to examine four different martial arts disciplines under the umbrella of combat sports in terms of attention and psychological ability levels. In addition, we wanted to investigate whether there are differences in limb usage, attention and psychological ability between these martial arts disciplines. It is thought that this study will help to show which branch will be more advantageous for improving the attention of athletes interested in combat sports within certain combat branches. These four similar fighting arms have a rare structure that has not been previously examined with attention or psychological skills surveys and has not been encountered or researched in the literature.

The Purpose and Importance of the Research

The purpose of our research is to study the attention and psychological skills of boxing, kickboxing, Muay Thai and Taekwondo athletes who are interested in combat sports. The four research branches were not chosen randomly. Each branch has its own techniques, and all have similar and different characteristics from other branches. These differences broaden the hypothesis of our research and allow us to look at the research from different perspectives. For example, while boxing only uses punches, Taekwondo uses both punches and kicks. While kickboxing uses punches, kicks and knees, Muay Thai is richer than other branches by including elbow strikes in addition to all of these techniques. The purpose is to study the relationship between attention and psychological skills, since the limb uses or techniques are similar between these branches and different from each other. In terms of importance, since research on combat sports is limited, it is thought that our study will contribute to this field. Since there are few studies addressing the cognitive and mental aspects of sports, it is very important to increase such studies.

Problem Statement of the Research

- Is there a significant difference in the attention and psychological skill levels of combat athletes according to the sport branch variable?
- Is there a significant difference in the attention and psychological skill levels of combat athletes according to the gender variable?

METHOD

Research Model

In this study, which aims to investigate the relationship between athletes' attention levels and psychological skills based on certain socio-demographic characteristics, a relational screening model from descriptive methods has been employed. Screening models are research approaches designed to reflect a situation that exists in the present or in the past. The subjects or objects of the study are described within the existing conditions as they are. The relational screening model is used to examine the relationships between multiple variables (Karasar, 2014). During the research process, no modifications or developments were made to the data collection tools; instead, the focus was on identifying and documenting the current state.

Research Groups

Our research group consists of 85 athletes involved in combat sports in Tekirdağ, selected randomly using a non-selective method. Of these athletes, 33 are female and 52 are male. The distribution across sports disciplines is as follows: 25 are involved in Boxing, 17 in Kickboxing, 22 in Muay Thai, and 21 in Taekwondo.

Data Collection Tools

In the study, a personal information form, the D2 Test of Attention, and a scale for evaluating athletes' psychological skills were used as the data collection tools.

The Personal Information Form consists of questions related to the participants' gender and the combat sports disciplines they are involved in.

Scale for Evaluating Athletes' Psychological Skills, developed by Smith et al., (1995) and translated into Turkish by Erhan et al., (2015) after validity and reliability studies, consists of 28 items. It uses a 4-point Likert scale and includes 7 sub-dimensions.

These dimensions and the items they are related to are as follows;

- Ability to Cope with Difficulties: 5,17,21,24 (4 items).
- Being Open to Learning: 3,10,15,27 (4 items).
- Concentration: 4,11,16,25 (4 items).
- Confidence and Success Motivation: 2,9,14,26 (4 items).
- Goal Setting and Mental Preparation: 1,8,13,20 (4 items).
- Being Able to Perform Well Under Pressure: 6,18,22,28 (4 items).
- Freedom from Anxiety: 7,12,19,23 (4 items).

The scoring is scored between 0 and 3 according to the expressions 'Almost never', 'Sometimes', 'Frequently' and 'Almost always'. Questions numbered 3, 7, 10, 12, 19 and 23 of the scale are negative and should be numbered in reverse. Scoring for sub-dimensions varies between 0 and 12 and an increase in the score obtained from the scale indicates that the athlete has good psychological skills.

Ability to Cope with Difficulty: This subscale measures whether an athlete is positive, enthusiastic, calm, controlled, and able to quickly recover from mistakes even when the going gets tough. 'I maintain emotional control no matter how things go for me'.

Openness to Learning: Measures whether an athlete is open to learning and accepts constructive criticism without taking it personally or getting upset. 'When a coach or manager tells me how to fix a mistake I've made, I tend to take it personally and get upset'.

Concentration: This subscale measures whether an athlete is easily distracted and can concentrate on the task even in unexpected adverse situations both in training and during matches. 'I can focus my attention and forget about distractions while playing sports'.

Confidence and Motivation for Success: Measures whether an athlete is confident and positively motivated during training and matches. 'I make the most of my talent and skills'.

Goal Setting and Mental Preparation: Measures whether an athlete sets and works towards specific performance goals. 'I set my own performance goals for every practice'.

Performing Well Under Pressure: Measures whether an athlete performs better under pressure. 'The more pressure there is during a game, the more I enjoy it'.

Releasing Worries: Measures whether an athlete puts pressure on himself by worrying about making mistakes or performing poorly (Smith & Christensen, 1995). 'I worry a lot about what others think of my performance'.

D2 Test of Attention is suitable for individuals aged 9 to 60 and can be administered either individually or in groups. It measures selective attention with a time-dependent approach. Key aspects assessed by the test include adherence to rules, the speed of task completion, and performance quality. The test consists of two pages: the front page features a personal information form with questions identifying the individual, their dominant hand, and a sample test application. It also includes a table showing the total score obtained. The back page contains 14 rows, each with 47 figures, totaling 658 figures. The test uses the letters 'd' and 'p,' with some letters having one, two, three, or four dots either above or below them. These letters and dot configurations appear in 16 different variations. The main task for the test taker is to identify the 'd' letters with exactly two dots. These can be detected in three different ways within the test. The test taker has 20 seconds to complete each row, and the total test duration is approximately eight minutes. At the end of the test, there are two separate scoring keys used to calculate the scores obtained from the d2 Test of Attention. The test is scored as follows (Zillmer & Brickenkamp, 1998):

Total Number of Marked Rows (TN): This is a quantitative measure of performance on all processed items, both relevant and irrelevant. It represents the parameter for attentional continuity and is the sum of correctly marked items.

Number of Unmarked/Omitted Steps (E1): This measures the error rate of missed or unmarked 'd' letters. It reflects selective attention, with a higher E1 indicating lower selective attention (Brickenkamp & Rump, 1966).

Number of Incorrectly Marked Letters (E2): This refers to the 'd' or 'p' letters that were incorrectly marked.

Total Errors (E): This includes both the unmarked (E1) and incorrectly marked letters (E2).

Concentration Performance (CP): This represents the concentration performance and is the only measure reflecting performance throughout the test. It is an excellent index of the coordination between accuracy and speed. CP is calculated by subtracting the number of incorrectly marked figures (E2) from the number of correctly marked relevant items.

Test Performance (TN-E): This score is obtained by subtracting the total number of errors from the total number of marked items. It represents the speed of marking and data processing. TN-E provides a Total Performance score, showing a normal distribution, high reliability, and measurement of the relationship between accuracy and speed. However, TN-E weighs the quantitative aspect of performance more heavily than the qualitative aspect. In unusual situations, where both quantitative and qualitative scores (total score and error percentage) are excessively high, TN-E may overestimate total performance. Excessive predictions can be avoided by considering error scores or, alternatively, by examining the recent concentration performance score.

Error Rate (% E): These variable measures the qualitative aspect of performance, representing the error rate among all processed items. As the error rate decreases, the accuracy,

quality of the task, and attentiveness of the subject increase. It is calculated by dividing the total number of marked rows by the total number of errors (TN / E).

Fluctuation Rate (FR): This is the difference between the row with the maximum number of processed items and the row with the minimum number. It is one of the less reliable measurements of the test. Extremely high FR scores may indicate inconsistency in work speed and could be related to decreased motivation.

Ethical Approval

The research was accepted and approved by the Social and Human Sciences Research and Publication Ethics Committee of Tekirdağ Namık Kemal University on 27 July 2023 at 16:00, during meeting number T2023-1577 (Document Date and Number: 28.07.2023-327095).

Collection of Data

Data was collected in January 2024 by visiting gyms where combat athletes were registered. The process involved first administering the d2 Attention Test while their minds were fresh, then administering the Personal Information Form, and finally administering the Psychological Skills Assessment Scale, all conducted face-to-face before training sessions.

Analysis of Data

The data was transferred to an electronic format using IBM SPSS v21.0 software and statistical analyses were conducted. Before analyzing the data, a normality test was performed, and independent sample t-test and one-way analysis of variance were applied to data showing normality. A significance level of $p < 0.05$ was considered in the analysis. For comparing scale data, Independent Samples T Tests were used for binary groups, and One-Way ANOVA was applied for groups of three or more. To determine which groups showed significant differences after the One-Way ANOVA, Tukey's Post Hoc test was performed.

Table 1. D2 attention test normality analysis with psychological skills

	Skewness	Kurtosis
Psychological Skill	-,134	,308
D2 Attention	-,293	-,270

Table 1 shows the results of the skewness and kurtosis normality tests of the Psychological Skills Scale and the D2 Attention Test Scale. Based on these results, it was determined that the data were normally distributed (+1.5, -1.5) (Tabachnick et al., 2013).

FINDINGS

Table 2. Comparison of d2 attention and psychological skills scale by gender variable

	Gender	n	X	ss	t	p
D2 Attention	TN	Female Male	33 52	454,52 449,65	77,85 103,5	,246 ,806
	E1	Female Male	33 52	36,03 59,52	19,26 47,58	-2,818 ,006*
	E2	Female Male	33 52	15,24 13,51	27,85 16,22	,361 ,719
	E	Female Male	33 52	51,27 73,03	36,08 51,77	-2,281 ,025*
	TN-E	Female Male	33 52	403,21 376,61	73,66 87,14	1,454 ,150
	CP	Female Male	33 52	142,66 118,36	38,19 47,43	2,476 ,015*
	FR	Female Male	33 52	17,39 18,92	6,86 8,03	-,903 ,369
	% E	Female Male	33 52	16,48 10,30	17,48 9,85	1,832 ,074
	Ability to Cope with Challenges	Female Male	33 52	2,66 2,85	,72 ,66	-1,200 ,233
	Openness to Learning	Female Male	33 52	3,50 3,23	,52 ,69	2,092 ,040*
	Concentration	Female Male	33 52	2,71 2,80	,49 ,59	-,704 ,483
	Confidence and Success Motivation	Female Male	33 52	2,71 2,80	,49 ,59	-,704 ,483
	Goal Setting and Mental Preparation	Female Male	33 52	2,72 2,87	,60 ,64	-1,089 ,279
	Performing Well Under Pressure	Female Male	33 52	2,28 2,69	,77 ,76	-2,363 ,020*
Psychological Skill	Overcoming Worries	Female Male	33 52	2,64 2,64	,59 ,61	-,002 ,998
	Total	Female Male	33 52	2,75 2,84	,34 ,43	-1,018 ,312

*(p<0.05)

Table 2 shows that there were no significant differences in the d2 Test of Attention scores based on gender for TN ($t=,246$), E2 ($t=,361$), TN-E ($t=1,454$), and FR ($t=-,903$) ($p>0.05$). However, significant differences were found in several areas. Specifically, for E1 (Number of Missed Items), female athletes ($M=36.03$) had significantly fewer missed items compared to male athletes ($M=59.52$) ($p<0.05$). Similarly, in terms of E (Error), female athletes ($M=51.27$) showed a significantly lower error rate compared to male athletes ($M=73.03$) ($p<0.05$). For CP (Concentration Performance), female athletes ($M=142.66$) demonstrated significantly better performance compared to male athletes ($M=118.36$) ($p<0.05$). Additionally, the %E (Error Rate) was significantly lower for female athletes ($M=16.48$) compared to male athletes ($M=10.30$) ($p<0.05$). Regarding psychological skill subdimensions, no significant differences were observed

for Ability to Cope with Challenges ($t=-1,200$), Concentration ($t=-,704$), Confidence and Success Motivation ($t=-,704$), Goal Setting and Mental Preparation ($t=-1,089$), Overcoming Worries ($t=-,002$), and Total ($t=-1,018$) ($p>0.05$). However, significant differences were noted in Openness to Learning, with female athletes ($M=3.50$) scoring higher than male athletes ($M=3.23$) ($p<0.05$). In contrast, for Performing Well Under Pressure, male athletes ($M=2.63$) showed significantly better performance compared to female athletes ($M=2.28$) ($p<0.05$).

Table 3. Comparison of d2 attention and psychological skill scale by sports discipline

Discipline		n	X	ss	p	Expressiveness	
D2 Attention	TN	(A) Boxing	25	453,72	114,38	,983	
		(B) Kickboxing	17	457,47	91,79		
		(C) Muay Thai	22	445,68	89,63		
		(D) Taekwondo	21	450,29	78,11		
	E1	(A) Boxing	25	42,12	35,41	,038*	B-A
		(B) Kickboxing	17	76,71	50,82		
		(C) Muay Thai	22	42,41	42,58		
		(D) Taekwondo	21	47,33	38,33		
	E2	(A) Boxing	25	16,20	16,22	,024*	D-C
		(B) Kickboxing	17	12,05	14,31		
		(C) Muay Thai	22	4,40	3,30		
		(D) Taekwondo	21	23,27	34,84		
	E	(A) Boxing	25	58,32	42,11	,036*	B-C
		(B) Kickboxing	17	88,76	56,69		
		(C) Muay Thai	22	46,81	42,34		
		(D) Taekwondo	21	71,09	43,34		
	TN-E	(A) Boxing	25	395,40	96,53	,639	
		(B) Kickboxing	17	368,70	77,65		
		(C) Muay Thai	22	398,81	83,04		
		(D) Taekwondo	21	379,19	70,14		
CP	(A) Boxing	25	136,12	43,76	,029*	C-B	
	(B) Kickboxing	17	105,11	49,82			
	(C) Muay Thai	22	144,36	42,16			
	(D) Taekwondo	21	118,90	40,08			
FR	(A) Boxing	25	16,52	6,11	,349		
	(B) Kickboxing	17	19,11	7,71			
	(C) Muay Thai	22	17,77	7,78			
	(D) Taekwondo	21	20,42	8,77			
% E	(A) Boxing	25	10,50	6,04	,024*	C-B	
	(B) Kickboxing	17	8,55	6,85			
	(C) Muay Thai	22	20,11	20,37			
	(D) Taekwondo	21	10,80	13,11			

($p<0.05$)

Table 3 (Continue). Comparison of d2 attention and psychological skill scale by sports discipline

	Discipline	n	X	ss	p	Expressiveness
Psychological Skill	Ability to Cope with Challenges	(A) Muay Thai	22	3,00	,56	,391
		(B) Taekwondo	21	2,70	,66	
		(C) Boxing	25	2,69	,82	
		(D) Kickboxing	17	2,72	,66	
	Openness to Learning	(A) Muay Thai	22	3,43	,52	,512
		(B) Taekwondo	21	3,26	,69	
		(C) Boxing	25	3,43	,61	
		(D) Kickboxing	17	3,17	,76	
	Concentration	(A) Muay Thai	22	2,89	,42	,400
		(B) Taekwondo	21	2,60	,59	
		(C) Boxing	25	2,79	,59	
		(D) Kickboxing	17	2,79	,62	
	Confidence and Success Motivation	(A) Muay Thai	22	2,89	,42	,400
		(B) Taekwondo	21	2,60	,59	
		(C) Boxing	25	2,79	,59	
		(D) Kickboxing	17	2,79	,62	
	Goal Setting and Mental Preparation	(A) Muay Thai	22	2,87	,63	,942
		(B) Taekwondo	21	2,76	,42	
		(C) Boxing	25	2,84	,71	
		(D) Kickboxing	17	2,79	,75	
	Performing Well Under Pressure	(A) Muay Thai	22	2,37	,76	,700
		(B) Taekwondo	21	2,54	,57	
		(C) Boxing	25	2,65	,97	
		(D) Kickboxing	17	2,55	,78	
	Overcoming Worries	(A) Muay Thai	22	2,38	,52	,109
		(B) Taekwondo	21	2,70	,64	
		(C) Boxing	25	2,69	,72	
		(D) Kickboxing	17	2,83	,35	
	Total	(A) Muay Thai	22	2,83	,30	,844
		(B) Taekwondo	21	2,74	,34	
		(C) Boxing	25	2,84	,49	
		(D) Kickboxing	17	2,81	,46	

When Table 3 is examined, no significant difference was found in the D2 Attention Test results by sports discipline for TN, TN-E, and FR dimensions ($p>0.05$). An analysis of E1 data revealed a significant difference in favor of Kickboxing ($M=76.71$) compared to Boxing ($M=42.12$) ($p<0.05$). For E2 data, a significant difference was found in favor of Taekwondo ($M=23.27$) compared to Muay Thai ($M=4.40$) ($p<0.05$). When examining E (Error) data, a significant difference was observed in favor of Kickboxing ($M=88.76$) compared to Muay Thai ($M=46.81$) ($p<0.05$). CP data showed a significant difference in favor of Muay Thai ($M=144.36$) compared to Kickboxing ($M=105.11$) ($p<0.05$). %E data revealed a significant difference in favor of Muay Thai ($M=20.11$) compared to Kickboxing ($M=8.55$) ($p<0.05$). No significant differences were found in the sub-dimensions of the Psychological Skills Test by sports discipline ($p>0.05$).

DISCUSSION AND CONCLUSION

The study aimed to examine the relationship between psychological skills and attention levels among combat sports athletes, specifically those in Tekirdağ. This study is considered one of the first in the field to explore these hypotheses, given the rarity of similar research in the context of the four combat sports disciplines involved. The scarcity of such studies highlights a gap in the field, emphasizing the study's contribution and its potential to address existing needs. The findings of this research, along with the recommendations provided, are expected to illuminate future research on the topic. Athletes were subjected to two types of tests under various conditions to ensure that their attention remained undistracted, aiming for the highest possible data reliability. This section discusses and interprets the results of the study.

In the comparison of the scores from the d2 attention and psychological skill scales based on the gender variable, the d2 attention test data showed no significant differences in the total number of marked lines (TN), the number of incorrectly marked letters (E2), test performance (TN-E), fluctuation rate (FR), and error rate (% E). According to the research results, the absence of a significant difference in the total number of marked lines (TN) by gender suggests that there is no distinctive difference in the marking and data processing speeds of the athletes. However, the analysis of unmarked/omitted steps (E1) data revealed that male participants had higher error scores and left more blank figures compared to female participants.

The Total Error (E) value represents the sum of E1 and E2. The absence of a significant difference in E2, which indicates the number of incorrectly marked figures, suggests that the Total Error (E) score, which shows a significant difference favoring males, aligns with the findings of the E1 score. In this context, it is observed that male athletes left more figures unmarked compared to female athletes, resulting in a significant difference in the Total Error values favoring males.

In the study conducted by Çağlar and Koruç (2006), no statistically significant difference was found between genders in terms of d2 attention test scores. This result shows that girls and boys have similar attention performances. At the same time, it can be evaluated that the effect of gender on the results of the attention test is limited. A study conducted by Eynur et al., (2017) revealed that female athletes exhibited statistically superior performance compared to male athletes in terms of adaptation, attention consistency, time focus, attention control, hand-eye-brain coordination and concentration skills. These findings show that female athletes' attention and coordination abilities are more developed than male athletes. Özdemir and Tokol (2008) suggests in his study that women differ from men not only in terms of hormonal and brain structure but also in their detailed thinking, abilities, and particularly attention. When examining the findings related to gender, women's lower d2 attention test error (E) scores compared to men indicate that they align with this characterization. However, it is not possible to claim that gender alone affects attention solely based on studies in the sports field. Similarly, Zillmer and Kennedy

(1999) found a significant difference only in the number of errors among students aged 18-32, with the difference favoring female athletes. Men had a higher number of errors in the d2 attention test compared to women.

The Concentration Performance (CP) data were found to be higher among female athletes. The higher level of concentration performance in female athletes suggests that they exhibit more significant differences in terms of performance speed and accuracy (Toker, 1990). Some studies on attention have noted that women's ability to focus is better than that of men (Bektaş, 2019). A review of the literature shows similar findings to the research results.

In the study examining the psychological skill levels of combat athletes according to gender, significant differences were found only in the sub-dimensions of openness to learning and performing well under pressure. No significant differences were observed in the other sub-dimensions. While other studies have reported significant differences in gender and psychological skill sub-dimensions, similar results were not found in our study. The lack of similar findings may be attributed to variations arising from similarities within combat athletes and across different sports disciplines.

In Şahinler's (2021) study, which involved a total of 428 athletes (218 women and 210 men) and assessed psychological skills, similar results were found in the sub-dimension of openness to learning, with women scoring higher. This aligns with our findings, as similar studies in the literature show comparable results regarding the impact of gender on psychological skill sub-dimensions. For instance, Rudman et al., (2013) describe men as having leadership qualities, being angry, assertive, career-oriented, analytical, persuasive, independent, ambitious, hardworking, sufficient, competitive, and capable of working well under pressure. In contrast, women are characterized by more emotional, affectionate, considerate, compassionate, polite, and naive traits. These stereotypes are not definitive but rather examples found in the literature. Therefore, it is important to avoid biases suggesting that women have lower psychological skills and instead create environments that enhance their self-confidence. Additionally, the results for performing well under pressure, where men scored higher, could indicate that their psychological skill levels contribute to their better performance under stress.

The comparison of participants' scores on the d2 attention and psychological skills scales according to their sports disciplines reveals the core findings of the study and the aspects most emphasized. Analysis of the d2 Test of Attention results shows that there are no significant differences among sports disciplines in terms of the total number of marked rows (TN), test performance (TN-E), and fluctuation ratio (FR) scores. The lack of significant differences in TN scores indicates that the number of marked items is similar across groups and that the groups have comparable attention continuity. The similarity in TN-E findings suggests that the marking and data processing speeds across disciplines are close to each other, indicating that the disciplines have similar qualitative scores. The absence of significant differences in FR scores reflects the uniformity in fluctuation rates among disciplines. This means that the difference

between the row with the maximum number of items processed and the row with the minimum number of items processed is similar across sports disciplines.

The findings regarding the number of unmarked/omitted steps (E1) indicate a significant difference, with kickboxers skipping more correct figures compared to boxers. This suggests that kickboxers have lower selective attention. In boxing, athletes need to choose the most suitable defensive actions based on their opponent's movements, requiring sudden reflexes and maximum focus (Çolakoğlu et al., 1993). Therefore, boxers must identify punches from opponents and distinguish deceptive blows. Additionally, because they focus intensely on their opponent's punches, their selective attention is continuously developed. In boxing, one of the most crucial tactics is not just punching but avoiding punches. The athlete gains an advantage by defending against incoming punches without getting hit, resulting in less effort and damage, which implies that their selective attention may be well-developed.

The findings related to the number of incorrectly marked letters (E2) indicate that Taekwondo athletes marked more incorrect figures compared to Muay Thai athletes, with a significant difference in favor of Taekwondo athletes. Additionally, the Total Error (E) score shows that kickboxers have a higher number of errors compared to Muay Thai practitioners. This suggests that kickboxers have lower performance (attention) levels and degrees of attention. In essence, while both disciplines are relatively similar, the perspective is not about the lower scores of kickboxers but rather the higher scores in a dynamic discipline like Muay Thai. Furthermore, a significant difference was found in Concentration Performance (CP) scores, with Muay Thai athletes scoring higher than kickboxers. This indicates that Muay Thai athletes exhibit better accuracy and coordination of speed throughout the test. CP scores are known to reflect performance across the entire test, and Muay Thai athletes achieve higher scores in this regard.

Muay Thai is a rich and intense sport with a high calorie burn rate, engaging almost every muscle group in the body. Compared to other sports, Muay Thai involves extensive use of limbs, including punches, kicks, knees, and elbows. This frequent use of various limbs requires athletes to quickly think and respond with appropriate defensive actions against incoming attacks. Therefore, the high performance observed in Muay Thai athletes in terms of Concentration Performance (CP) aligns well with the sport's dynamic and diverse movement requirements. The rich content of Muay Thai has also brought it to recognition at the Olympic level. In the coming years, this rich and cognitive difference will be at a level that will be able to reveal its difference in the Olympics (Muller & Capraro 2024)

The findings from the test examining athletes' psychological skill levels reveal that there are no significant differences between the sub-dimensions across different disciplines. The most immediate interpretation of this result could be the similarity between the disciplines. Athletes work in similar competitive environments, follow comparable training styles, and train in similar gyms. This similarity may have prevented significant differences in the psychological skill sub-

dimensions. Ultimately, each athlete is exposed to the same challenges and benefits associated with combat sports within a fighting environment. Regardless of the specific discipline, all combat sports involve experiencing similar emotions such as pre-match anxiety, stress, and pressure. The technical, tactical, and rule-based similarities between disciplines may also contribute to the lack of significant differences observed.

Sports activities significantly influence individuals not only in terms of physical health but also psychological well-being. Physical exercise is directly related to individuals' mental states, highlighting a noteworthy interaction between these two domains. In this context, research supports the positive effects of sporting activities on both physical and mental health (Çelik, 2023)

In our study, it was found that female athletes obtained more significant differences in the attention test compared to male athletes. In psychological skill data, significant differences were only found in the sub-dimension of performing better under pressure, where males showed superior performance. Additionally, among the compared combat sports, Muay Thai was clearly observed to have a more significant difference in attention compared to other sports. No significant differences were found in the psychological skill test.

Conclusion

When the results are examined; it is frequently stated in the literature that women are more prominent than men in terms of attention. Women's meticulousness and attention in daily life seem to be reflected in the test results. However, men's endurance also comes to the fore in psychological competence tests. It is seen that men have stronger psychological skills than women. When we examine the tables, the research results show that Muay Thai is among the four sports with the highest D2 attention level. In fact, it is quite possible for Muay Thai to achieve this success and reflect it in the data thanks to the abundant use of limbs and multi-directional kicks. Muay Thai has a very deep-rooted and ancient history among all martial arts. In this way, it has evolved and spread over time and is still quite popular thanks to its beneficial uses.

Recommendations

Firstly, given the limited number of studies on combat sports in the literature, it is advisable to increase the number of such studies. Research can be conducted under the general umbrella of combat sports and further specialized to focus on individual disciplines if possible. Expanding the sample size to include more athletes could also be beneficial. Using test-retest methods in the same environment and at the same time, where general arousal and attention levels are high and equal, could provide more consistent and meaningful results. Psychological skill-enhancing training programs for athletes can be developed. Additionally, efforts to increase research in sports facilities could be made. Universities, The Ministry of Youth and Sports (GSB), and the Ministry of National Education (MEB) can coordinate to provide athletes with more professional

support. While there is a strong focus on developing sports skills, it is equally important to enhance psychological skill levels. Organizing activities to boost and develop attention can be beneficial. More diverse tests and surveys for measuring attention should be applied.

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Examining the Leadership Styles and Effects of Sport Managers

Ejder GÜNEŞ^{1*}, Hüseyin Olcay KILIÇ², Halil YARAR³

¹Gazi University, Faculty of Sport Sciences, Ankara

²Uludağ University, Faculty of Science and Letters, Bursa

³Çankırı University, Faculty of Economics and Administrative Sciences, Çankırı

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Abstract

This study aims to investigate the leadership styles of sports managers and the impacts of these styles. Leadership, in its modern sense, was first used in the British Parliament in the 19th century and has gradually become a significant concept in business, education, and social fields. Leaders guide groups towards specific goals and enhance motivation through tasks such as crisis management, rewarding, and innovation. Management, on the other hand, focuses on coordinating resources and people in harmony to achieve organizational goals. While managers utilize hierarchical authority, leaders create influence through personal skills and charisma. Sports managers bear significant responsibilities when making strategic decisions and managing daily operations. Leadership styles reflect managers' strategic visions, values, and management strategies, and these styles yield different outcomes on organizational performance, team cohesion, motivation, and individual development. Research has shown that various leadership styles, such as transformational, autocratic, and democratic leadership, are key factors determining the effectiveness of sports managers. Leadership influences the dynamics within the organization and enhances employee motivation. This study examines the leadership styles of sports managers and their effects through a literature review methodology. The findings provide a comprehensive understanding of the leadership styles of sports managers and their impacts. These findings will contribute to the existing body of knowledge and serve as a foundation for future research on sports management leadership.

Keywords: Spor, Leadership, Transformational, Authoritaria

Spor Yöneticilerinin Liderlik Tarzlarının ve Etkilerinin Araştırılması

Öz

Bu çalışma spor yöneticilerinin liderlik tarzlarını ve bu tarzların etkilerini araştırmayı amaçlamaktadır. Liderlik modern anlamda 19. yüzyılda İngiliz parlamentosunda kullanılmış ve zamanla iş dünyası, eğitim ve sosyal alanlarda önemli bir kavram haline gelmiştir. Liderler kriz yönetimi, ödüllendirme ve inovasyon gibi görevlerle grupları belirli hedeflere yönlendirir ve motivasyonu artırır. Yöneticilik ise kaynakları ve insanları uyum içinde yöneterek organizasyonel hedeflere ulaşmayı amaçlar. Yöneticiler hiyerarşik yetkileri kullanırken, liderler kişisel yetenekleri ve karizmalarıyla etki yaratırlar. Spor yöneticileri stratejik kararlar alırken ve günlük operasyonları yürütürken önemli sorumluluklar üstlenirler. Liderlik tarzları yöneticilerin stratejik vizyonlarını, değerlerini ve yönetim stratejilerini yansıtır ve bu tarzlar organizasyonel performans, takım uyumu, motivasyon ve bireysel gelişim üzerinde farklı sonuçlar doğurur. Yapılan araştırmalarda dönüşümcü, otokratik ve demokratik liderlik gibi çeşitli liderlik stillerinin spor yöneticilerinin etkinliğini belirleyen önemli faktörler olduğu gösterilmektedir. Liderlik örgüt içindeki dinamikleri etkiler ve çalışanların motivasyonunu artırır. Çalışma, literatür taraması yöntemiyle spor yöneticilerinin liderlik tarzlarını ve bu tarzların etkilerini incelemektedir. Elde edilen bulgular spor yöneticilerinin liderlik tarzlarını ve bu tarzların etkilerini kapsamlı bir şekilde ortaya koymaktadır. Bu bulgular mevcut bilgi birikimine katkı sağlayarak spor yöneticileriyle ilgili gelecekte yapılacak çalışmalara temel oluşturacaktır.

Anahtar kelimeler: Spor, Liderlik, Dönüşümcü, Otoriter

* **Corresponding Author:** Ejder GÜNEŞ, **E-mail:** drejdergunes@gmail.com

INTRODUCTION

Nowadays, sports management is becoming increasingly important as a complex and dynamic field. Effective management of sports organizations is critical for both increasing the performance of athletes and achieving institutional goals. Thus, the leadership styles of sports managers and the effects of these styles on organizations have been a subject of interest. The leadership styles adopted by sports managers influence not only internal team dynamics but also organizational performance. For instance, digital leadership has facilitated the integration of data-driven decision-making, thus improving the overall operational efficiency of sports organizations (Avolio et al., 2000). Similarly, transformational leadership has been found to enhance team cohesion and motivation, thereby fostering improved organizational outcomes (Ghasabeh et al., 2015). Understanding the varied impacts of these leadership styles is essential for developing effective management strategies aimed at ensuring the long-term success of sports organizations. In this context, this study aimed to investigate the leadership styles of sports managers and the effects of these styles on sports organizations. Leadership can affect sports managers' decision-making processes, team dynamics, and performance. Therefore, an in-depth examination of the leadership styles of sports managers is vital for the sustainable success of sports organizations.

In recent years, leadership has emerged as a critical concept in sports management, akin to its relevance in business and social sciences (Northouse, 2021). Leadership styles are instrumental in shaping organizational outcomes, especially in dynamic environments like sports organizations. Contemporary leadership models such as transformational leadership, participative leadership, and digital leadership have been shown to influence decision-making processes, enhance team dynamics, and contribute to effective crisis management in sports management (Bass and Riggio, 2006). These leadership styles play a vital role in adapting to the evolving demands of the sports industry while optimizing organizational performance.

The leadership approaches and visions of sport managers have a great influence on the success of the team. Leadership approaches can influence the team's motivation, discipline and cohesion. Vision sets the goals and values of the team and enables the team to act as a whole. It plays an important role in issues such as the content of decisions made together with athletes and training programs. Therefore, accurate and effective communication is a great necessity in the working philosophy of leaders (Akyüz, 2020). While 82.5% of amateur football coaches adopt a mixed leadership style, 16.5% adopt a democratic leadership style and 1.0% adopt an autocratic leadership style (Körük, 2003). These statistics show that the majority of amateur football coaches prefer mixed leadership style and emphasize the importance of effective communication and flexible leadership understanding in their relationships with athletes.

The success of an organization depends on the leadership qualities of its managers. For this reason, leader managers should be trained without making a distinction between leaders and managers and the concept of managerial leadership should be adopted. Since leadership is a personality trait,

children should be given responsibilities to develop their leadership skills at an early age. Since sports support the development of leadership qualities, it is important to encourage children to participate in sports (Gökçe & Çam, 2008). This approach will help future leaders to acquire the necessary skills from an early age. Education systems and families should contribute to the development of children's leadership skills by supporting their participation in sports. Sports organizations and schools should organize programs and activities to support both physical and personal development of children. As a result, directing children to sports at an early age and developing their leadership qualities will enable them to raise more effective and successful leaders in the long term.

People live collectively because of their nature. In this social order, many people have been leaders willingly or unwillingly at some point in their lives; therefore, anyone who manages an organization or assumes responsibility for a group can be described as a leader (Gordon, 1999). However, when leadership is considered in terms of management, a leader is a person who increases the productivity, development, and working performance of the organization and its employees, helps them to adapt, and balances the functioning of the organization (Avolio & Bass, 2004). Moreover, leadership plays an important role in how individuals react and manage themselves in different situations (Draft & Lane , 2005).

Leadership is a factor that affects the dynamics within the organization and increases the motivation of employees (Schein, 2010). The leader needs to inspire and motivate employees by clearly communicating their vision and goals (Northouse, 2021). Furthermore, leadership is necessary to carry out effective management and decision-making processes in crises (Yukl, 2006). Leadership also plays an important role in change management processes and enables organizational adaptation (Bass & Riggio, 2006). The purpose of this study is to examine the leadership styles of sport managers and to understand the effects of these styles on sport organizations. In this context, the research aims to make an original contribution to sport management and leadership theories and to provide new strategies on how to develop effective leadership approaches in sport organizations.

METHOD

This study is designed as a literature review to compile the existing literature on leadership styles of sport managers and the effects of these styles. Literature review aims to systematically collect and analyse the studies on a specific topic and summarise the knowledge in the field.

In the literature review, previously published books, articles, theses, dissertations, conference proceedings, historical records and reports related to the research topic are searched, found and analysed, and in this way, information that will contribute to the study is tried to be obtained. The

purpose of the literature review can be briefly stated as obtaining the information needed for the research (Demirci, 2014).

The main sources of the research are electronic databases (such as Google Scholar, Scopus, Web of Science) and articles published in relevant academic journals. The study covers the studies published between 2000 and 2023. The reviewed sources were categorised under themes such as leadership styles, effects of sport managers, organisational success and motivation. In addition, the studies selected during the literature review were evaluated according to their methodology and findings, and important trends in the field were identified. This review study aims to provide a framework for understanding the effects of sport managers' leadership styles on organisational performance, team cohesion, individual development and motivation.

FINDINGS

Leadership

Although the origin of the word leader dates back to the 1300s, the concept of leadership was first used in the early 19th century in writings on the control and political influence of the British parliament (Işık-İnan & Serinkan, 2020). The term leadership was developed and widely used in writings on the control and political influence of the British parliament. The evolution of the concept of leadership in this period played an important role in the formation of modern leadership theories. Leadership has become an important concept not only in the political field but also in business, education, and other social fields.

Leadership is the process of directing more than one person through power and influence (Çelik, 2013). Leaders respond to problems, manage crises, reward and punish followers, as well as provide them with encouragement and support. Moreover, leaders are interested in organizational innovation; they try to promote creativity, innovation, and organizational cultures conducive to a harmonious and challenging work environment (Saeed et al., 2014). The presence of emotional tensions and conflicts in the organization is a dimension of the organizational environment. Leaders can help to reduce tensions, harmonize misunderstandings, and deal with destructive behaviors (Deutsch et al., 2011). Leading groups of people aiming to achieve specific goals requires special skills and persuasiveness. Therefore, a leader can be defined as a person who determines the goals of the group of which he/she is a member and guides the group most effectively to achieve these goals.

Leadership plays a critical role in the success of an organization. A good leader motivates team members, shares the vision, and encourages cooperation. Besides, leaders should be equipped with effective communication skills so that they can convey their message clearly and build understanding and cohesion within the team. Research showed that it was essential for leaders to

be flexible in their decision-making processes and to adapt to changing circumstances (Goleman, 1995). Therefore, leadership skills should be continuously developed and practiced, because successful leadership is vital for the sustainable success of the organization.

Management

The concept of management refers to a person who directs a group of people in harmony and cooperation to achieve certain goals. According to another definition, it is a person who gathers resources to achieve the goals set within a certain period. The characteristics of management include general culture, logical thinking, analytical skills, synthesis ability, and imagination (Genç, 2012) The characteristics of a manager's character include a balance between reason and emotion, caution, and a strong memory.

Management enables an organization to bring together resources appropriate to the purpose of producing services or products. These functions are usually fulfilled through hierarchical authority. Leadership, on the other hand, is the ability to exert influence by utilizing one's natural abilities. While managers generally use the authority derived from their positions, leaders draw strength from their characteristics and support (Durmuş, 2001). In this context, the main difference between management and leadership is that managers systematically manage resources to achieve organizational goals, while leaders create influence by using individuals' motivation and natural abilities.

Leadership in Sport Management

Among the leadership styles of sport managers, it is emphasized that modern approaches are more effective and will bring success. Especially transformational leadership has an important place for sport managers. This leadership style requires managers to have high skills and aims to inspire and empower their followers and show them the necessary ways to achieve their goals. The application of leadership approaches adopted by sport managers is of great importance in the field of sport. The fact that these administrators take an active role in every field of sport increases their importance in the general structure of sport (Gündoğan, 2014). According to a study conducted by (Gökçe, 2005), it was stated that sports administrators working in the Provincial Directorates of Youth and Sports exhibited more status quo and task-oriented leadership, while administrators working in private clubs were stronger in the relational leadership dimension.

Directive Leadership and its Applications in Sport Management

Directive leadership is a leadership style in which the leader defines expectations, establishes processes, allocates tasks, and ensures the achievement of set performance standards (Ogbonna & Harris, 2000). This leadership style instructs employees on how and when to perform tasks, sets clear performance standards, and clarifies rules and regulations (Baker, 2022). The directive leader determines the best option to move the organization forward, manages roles and processes to implement the strategy, motivates team members, anticipates developments and risks, observes performance and prevents harmful situations by intervening when necessary (Olson & Simerso,

2015) Directive leadership is a critical leadership style that facilitates organizations to achieve their goals with its effectiveness in providing clarity and structure.

Participative Leadership and its Applications in Sport Management

Participative leadership is a style in which management authority is shared with employees and these leaders have a democratic approach. A democratic atmosphere is created in the organization where employees are informed about their work, their suggestions and ideas are taken and thus decisions are taken jointly (Tengilimoğlu & Yiğit, 2005). This type of leadership increases the motivation of employees, improves their self-confidence, and empowers them (Susan & Whiteley, 2007). In this leadership style, which emerges in periods when humanistic relations are emphasized, there is a high level of trust between the leader and the followers. Participative leaders show their trust in employees by involving them in the decision-making process while determining the goals, policies, and plans of the organization (Şafaklı, 2005). In this context, participative leadership is an important leadership approach that strengthens commitment and cooperation within the organization by making employees feel valued.

Transformational Leadership and Its Applications in Sport Management

This is a leadership style in which the leader gains the respect and trust of followers by being a role model. The leader inspires trust by highlighting values overcoming difficulties and emphasizing the importance of goals and ethical decisions. This approach enables followers to take the leader as an example and identify with the leader in line with common goals (Demir & Okan, 2008). Furthermore, the transformational leader creates and shares a vision, changes the needs and beliefs of followers, and achieves superior performance by ensuring change and renewal (Koçel, 2007). The leader's inspirational role modeling increases the motivation of the followers and has a critical impact on achieving the vision and goals of the organization. A true transformational leader is flexible, creative, goal-oriented, people-oriented, future-oriented, analytical, courageous, and pioneering. He or she motivates followers, handles complexity simply and clearly, and encourages change. This leadership style is flexible according to the situation, the work, and the followers and enables transformation. A true leader like Mustafa Kemal Atatürk has these characteristic features (Cömert, 2004).

In a study conducted in 117 elementary schools in the United States of America, it was found that transformational leadership behaviors of school principals were not directly related to turnover rates of school staff and improvements in student achievement. However, it was found that transformational leadership behaviors had a direct effect on staff job satisfaction and this job satisfaction had an indirect effect on reducing staff turnover rates (negatively) and increasing student achievement (positively) (Griffith, 2004).

In a study, it was stated that private universities exhibit transformational leadership characteristics more effectively than public universities (Batmunkh, 2011). Both transformational and transactional leadership styles of principals were found to positively affect teachers' job satisfaction

(Koutouzis & Malliara, 2017). The study examined the reflection of transformational leadership practices by central government and private sector managers in Turkey. The results of the research reveal that private-sector administrators can exhibit transformational leadership characteristics to some extent, but public-sector administrators do not have these characteristics (Bresctick, 1999). Studies have shown that teachers feel great satisfaction when the school principal takes on a transformational leadership role (Kouni et al., 2018). School administrators who exhibit transformational leadership style provide support to teachers, take a closer interest in them, and guide them whenever they have the opportunity. This approach increased teachers' motivation and job satisfaction (Blase & Blase, 2000).

According to the results of Gündoğdu and Sunay's (2018) research, it was found that sport managers mostly exhibit transformational leadership. In terms of our country, the fact that managers in the sports sector see themselves as transformational leaders is considered a positive and important finding.

Digital Leadership and Its Applications in Sport Management

Digital leadership refers to the ability to manage the integration of digital technologies and innovations into organizational strategy and operations. Digital leaders play critical roles in setting vision and strategy, adapting to change, developing digital competencies, and collaborating with digital ecosystems while driving organizations' digital transformation processes. This leadership style aims to increase efficiency, foster innovation, and provide a competitive advantage through the effective use of digital tools. Digital leaders also support data-oriented decision-making processes, enabling organizations to be more flexible and agile in dynamic and uncertain business environments. In a research, it was stated that the qualities required for digital leadership were reality, inspiration, vision, justice, reverse mentoring, personalization, innovation, and knowledge (Güler, 2023; Toduk, 2023)

The theoretical basis of digital leadership can be based on transformative leadership theory. This theory emphasizes the concepts of 'vision' and 'influence', which are the basic elements of digital leadership within the scope of the leader's efforts to influence his/her followers in a stable environment (Bass & Avolio, 1993).

Visionary Leadership and Its Applications in Sport Management

In the management literature, the concept of vision is sometimes considered as an independent type of leadership and sometimes as an important component of the leadership process. In both cases, it is accepted as a dominant element of new leadership approaches with its intellectual and operational aspects (Erçetin, 2000).

Visionary leadership involves not only making plans for the future but also making group members believe in this vision (Yıldırım, 2019). Therefore, visionary leaders are those who draw the road map that will lead the organization to success with their followers, cooperate with them on this road, increase performance by providing motivation, create a strong organizational culture, and

emphasize the importance of continuous development and change (Ehtiyar, 2011). Visionary leadership plays a vital role in achieving sustainable success by increasing the motivation and commitment of its members while shaping the future of the organization. Studies revealed that the visionary leadership competencies of school administrators did not show a significant difference between teachers working in terms of the school level (primary school, secondary school, and high school) (Deneri, 2019; Koçer, 2021). In the global literature, visionary leadership is based on being strong without intimidating employees, having authority without putting pressure on individuals, motivating employees, and transforming large masses into an intellectual movement (Tekin, 2007).

Democratic Leadership and Its Applications in Sport Management

Democratic leadership is inspired by the behaviorist research tradition, with a focus on power-sharing and follower empowerment (Yukl, 2018). Democratic leaders involve one or more employees in the decision-making process but retain the final decision-making authority. This leadership style is not a sign of weakness, but a symbol of strength that will gain the respect of employees (Spurgeon et al., 2015). Moreover, democratic leaders refuse to exercise authority over others, encourage participation, rely on the knowledge of their followers, and attach great importance to their respect (Draft & Lane, 2005).

In the field of physical education and recreation, the multidimensional nature of leader behaviors is mentioned, and it is stated that a democratic, respectful approach is appropriate for profit-oriented organizations such as tennis clubs and a designing leadership style is appropriate for work-related organizations such as professional basketball. It is also suggested that the level of respect shown by college physical education administrators is related to job satisfaction (Chelladurai, 1980). In a study conducted in banks, it was determined that branch managers exhibited a democratic and open attitude toward change (Okakın & Tınaz, 1997).

Charismatic Leadership and its Applications in Sport Management

Charismatic leaders are individuals who have extraordinary prestige and power of influence on the masses and who revive a sacredness within themselves (Akşit, 2008). Such leaders usually emerge as a result of crises and chaotic conditions. Great charismatic leaders such as Atatürk, Gandhi, Hitler, and Martin Luther King all emerged as a product of unfavourable conditions in their countries. Adverse conditions such as economic crises, political instability, or war situations increase the need of societies for heroes. Especially societies that are not sufficiently organized need a hero to put many problems in order and make progress (Baltaş, 2000). Therefore, managers who are seen as charismatic leaders tend to be perceived as both critics of the status quo and realizers of radical reforms (Conger et al., 2000). Charismatic leaders assume important roles in the stage of history with their capacity to provide the change and stability that societies need by emerging in times of crisis. It is seen that the majority of people with charismatic, managerial, and transformational leadership characteristics are from the private sector. This situation is because management in the central administration functions by certain rules and leadership qualities cannot be revealed (İnce, 2001).

In a postgraduate study conducted on students studying in military high schools, leadership characteristics of students who do team sports, individual sports, and non-sport students were examined. As a result of the study, it was thought that students who did not do sports exhibited charismatic leadership characteristics more in terms of average values, and this was thought to be due to the mission of the educational institution they were in (Başoğlu, 2006).

Autocratic Leadership (Authoritarian) and Its Applications in Sport Management

Authoritarian leadership style is a task-centred leadership style in which decisions are made only by the leader and authority stems from the leader's position (Çoroğlu, 2003). These leaders do not involve group members in the management process and all management authority is concentrated in the leader. Employees' opinions are not consulted when setting goals, strategies, and programs. Authoritarian leaders use strategies such as giving orders and criticizing their failures and mistakes to influence their employees because they think that the motivation of the members of the organization can be provided by external factors, namely orders and punishment (Şahin et al., 2004). This leadership style is effective in times of crisis or emergencies when quick decision-making is important. It can also be used when other leadership styles do not work in dealing with problematic employees (Buluç, 1998).

In autocratic leadership, the leader's position is excessively strengthened and emphasized. Motivation and guidance are usually provided through punishment. Except in extraordinary circumstances, the leader does not delegate authority. Communication is top-down; there is almost no bottom-up flow of information. The people around the leader do not participate in the process or have close relations with the leader (İbicioğlu et al., 2009).

Leadership and Management

Despite their similarities, it is recognized that leadership and management are different concepts (Erçetin, 2000). Both managers and leaders use some kind of power to get those around them to do what they want. Moreover, in both concepts, close relationships are established with employees. However, while management is a professional practice, leadership involves motivating people by influencing them. While management requires a formal position, leadership does not. While management is concerned with doing the work that will enable one to reach the determined goals in the fastest way, leadership is concerned with determining these goals (Koçel, 2011). While managers use their power and authority to influence people, leaders try to influence people with their behaviors, visions for the future, and individual characteristics. While management is a job to be done, leadership is an art. While the manager tries to do the work assigned to him/her most correctly, the leader does the work he/she finds right. A person does not have to be both an excellent leader and a good manager. These two concepts are different, and each involves different duties and responsibilities (Kotterman, 2006). These fundamental differences between leadership and management show that both roles play different but complementary roles in the success of organizations.

Leadership Practices

The leadership styles of sports managers play a critical role in the success and sustainability of organizations. Effective leadership not only enhances performance in sports organizations, but also supports team cohesion, motivation, and individual development. In this context, the leadership practices adopted by sports managers reflect their vision, values, and management strategies. When leadership theories and approaches were analyzed, various styles such as transformational leadership, autocratic leadership, and democratic leadership emerged. Each leadership style varies according to different situations and needs and is important in determining the effectiveness of sports managers.

Table 1. Leadership approaches and practices

Leadership Acts and Styles	Autocratic	Democratic	Participatory
Goal Determination	Single authority leader	Listens to followers' opinions	Everyone's opinion is listened
Decision Making	Follower opinion is not received	Collects feedback from followers	Follower opinions are provided
Communication	From top to Bottom	From top to Bottom, From Bottom to Top	Versatile
Motivation Type	Punishment Included	Rewarding	Positive reinforcement
Delegation of Authority	No	Sometimes	Continuous

Cited: (Özsalmanlı, 2005).

Table 1 shows how autocratic, democratic, and transactional leadership styles differ in terms of goal setting, decision making, communication, motivation, and delegation of authority; autocratic leaders were centralized, democratic leaders valued followers' opinions, and transactional leaders delegated authority continuously.

A study examined turnover intentions of softball and volleyball assistant coaches in the National Collegiate Athletic Association (NCAA) and found that both transformational and transactional leadership behaviors reduce voluntary turnover intentions (Wells & Welty-Peachey, 2011). However, other studies found only limited evidence that transformational leadership influences NCAA football conference athletic department employees' job satisfaction; however, transformational leadership was found to have an impact on employees' commitment at the organizational and individual levels (Kim et al., 2012). These results suggest that the effects of leadership styles on turnover intentions and employee engagement may differ across sports and organizational structures.

Research indicated that leaders should use various forms of power to influence others and increase employee satisfaction and performance and that it was more effective to prefer personal power rather than positional power (resource control, reward-punishment, formal authority, counselling) (Kotter, 1986).

In a master's thesis study, the effect of leadership behavior on employees' perceptions of organizational commitment, organizational support, and job satisfaction was examined. As a result, it was determined that the perception of managerial support affects employees' perceptions of organizational commitment, organizational support, and job satisfaction (Tinti, 1995).

Research indicated that leaders can be more effective and increase employee satisfaction by using personal power rather than position power. Moreover, it was determined that managerial support positively affects employees' perceptions of organizational commitment, organizational support, and job satisfaction. These results emphasize that effective leadership can be achieved through personal influence and supportive management.

DISCUSSION AND CONCLUSION

Examining the leadership styles and effects of sports managers is crucial for the success and sustainability of sports organizations. Research in this field reveals the existence and importance of various factors affecting the leadership behaviors of managers. When the Turkish sports literature is examined, it is seen that studies focusing on the concept of leadership are limited. (Kocamaz et al., 2019) examined the leadership perceptions of employees working in sports organizations, and the most frequently emphasized concepts of the participants were guidance, having knowledge and experience, and influence. Based on this study, it can be said that leaders in the field of sport can be considered as important characteristics of leaders who provide guidance, are equipped with knowledge and experience, and can influence their followers. The findings of (Gündoğdu & Sunay, 2018) study revealed that sport managers generally exhibit transformational leadership. The fact that managers in the sports sector see themselves as transformational leaders is considered as a positive and remarkable result for our country. Velez (2019) conducted semi-structured interviews with 6 female coaches and 4 male administrators to examine the underrepresentation of women in leadership positions in intercollegiate sport events in Puerto Rico. This study focused on the barriers to greater representation of women in leadership roles and strategies to facilitate women's access to leadership positions in sport.

According to a study, the effects of leadership styles on employees' team cohesion were analysed. The study revealed that people-oriented and task-oriented leadership approaches play an important role on employees' team performance and job satisfaction. It has been observed that task-oriented leadership behaviours are more prominent especially among blue-collar employees, whereas people-oriented leadership approaches create higher trust and cooperation within the team (Smith, 2019). In addition, it has been found that leadership perceptions of individuals working in different sectors and positions differ according to workload, communication level and organisational structure (Stashevsky & Koslowsky, 2016). In a similar study conducted in the field of sport, the effects of coaches 'leadership behaviours on athletes' motivation and performance were

investigated and it was determined that these effects did not vary according to the career stages and branches of athletes (Brown & Johnson, 2020).

The findings of this study reveal that the leadership styles of sport managers play a decisive role in organisational performance and sustainability. Directive leadership is effective in terms of creating clear goals and structure and plays a critical function in achieving organisational success (Northouse, 2021). Participative leadership strengthens team collaboration by increasing employee motivation and commitment (Goleman, 2020). Transformational leadership improves the performance of followers through vision and inspiration, while digital leadership supports the integration of technological innovations into business processes (Antonakis & Day, 2021). Visionary leadership has a significant impact on strategic planning and motivation (Dinh et al., 2021). Democratic and charismatic leadership styles increase organisational satisfaction by emphasising the active participation of employees in decision-making processes and the personal influence of the leader (Wang & Howell, 2020). However, although autocratic leadership style is effective in rapid decision-making processes, it may have negative effects on employee satisfaction and motivation in the long term (Iqbal et al., 2020).

In conclusion, the leadership styles of sports managers should vary according to the dynamics and needs of organizations. Leaders' ability to flexibly apply different leadership styles according to situational needs will increase both individual and organizational success. This study emphasizes the need for a broader perspective of leadership practices in sports management and the importance of developing effective leadership strategies. Future research may provide more specific recommendations for sports managers by examining the effects of leadership styles in different sports branches in more detail.

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Ethical Approval: The study does not require ethical consent as it is a retrospective screening study. However, the principle of full compliance with national and international ethical rules and principles the research process was completed by adopting this approach.

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