



Revista on line de Política e Gestão Educacional
Online Journal of Policy and Educational Management



¹ Faculty of Sport Sciences, Aydin Adnan Menderes University, Aydin, Türkiye.

² Faculty of Sport Sciences, Aydin Adnan Menderes University, Aydin, Türkiye.

³ Faculty of Sport Sciences, Yozgat Bozok University, Yozgat, Türkiye.

⁴ Akdeniz University, Antalya, Türkiye.

⁵ Faculty of Sport Sciences, Mersin University, Mersin, Türkiye (Corresponding Author).

⁶ Faculty of Sport Sciences, Mersin University, Mersin, Türkiye.



DARK TRIAD TRAITS IN SPORTS EDUCATION: RELATIONSHIP WITH AGGRESSION IN TAEKWONDO ATHLETES

TRAÇOS DA TRÍADE OBSCURA NA EDUCAÇÃO ESPORTIVA: RELAÇÃO COM A AGRESSÃO EM ATLETAS DE TAEKWONDO

RASGOS DE LA TRÍADA OSCURA EN LA EDUCACIÓN DEPORTIVA: RELACIÓN CON LA AGRESIÓN EN ATLETAS DE TAEKWONDO

Sermin Agrali ERMIS¹
s.agrali.ermis@adu.edu.tr
INurcan MAZILI²
nurcanmazili@gmail.com
Yesim Karac OCAL³
ysm74@hotmail.com
Atilla ŞAHAN⁴
alex-popova@ukr.net
Turhan TOROS⁵
turhantoros@yahoo.com
Emre SERIN⁶
emreserin@mersin.edu.tr



How to reference this paper:

Ermis, S. A., Mazili, N., Ocal, Y. K., Şahan, A., Toros, T., & Serin, E. (2025). Dark triad traits in sports education: relationship with aggression in taekwondo athletes. *Revista on line de Política e Gestão Educacional*, 29(esp.1), e025031. DOI: 10.22633/rpge.v29iesp1.20463

Submitted: 19/05/2025

Revisions required: 13/06/2025

Approved: 30/06/2025

Published: 31/07/2025

ABSTRACT: The study examines the relationship between Dark Triad personality traits and aggression levels in Taekwondo athletes in Turkey. It aims to identify these traits, analyze differences based on demographic variables, and explore their interrelation. The sample consisted of 307 Taekwondo athletes selected randomly. Data were analyzed using scales, and the Pearson correlation coefficient was calculated to assess relationships. Results revealed a positive and significant correlation ($r=0.319$) between Dark Triad traits and aggression levels. When comparing athletes from contact and non-contact categories, contact athletes scored higher, particularly in the passive aggression dimension, showing a significant difference. These findings suggest that the nature of the sport, requiring high motivation and direct combat, may influence the development of personality traits such as Machiavellianism, narcissism, and psychopathy, as well as aggression levels. The study contributes to understanding how sports environments impact psychological and behavioral traits in athletes.

KEYWORDS: Taekwondo. Dark Triad. Agression. Sports Education.

RESUMO: O estudo analisa a relação entre os traços de personalidade da Tríade Sombria e os níveis de agressividade em atletas de Taekwondo na Turquia. O objetivo é identificar esses traços, examinar diferenças com base em variáveis demográficas e explorar suas inter-relações. A amostra foi composta por 307 atletas de Taekwondo selecionados aleatoriamente. Os dados foram analisados por meio de escalas, e o coeficiente de correlação de Pearson foi calculado para avaliar as relações. Os resultados revelaram uma correlação positiva e significativa ($r=0,319$) entre os traços da Tríade Sombria e os níveis de agressividade. Ao comparar atletas das categorias de contato e sem contato, os atletas de contato apresentaram pontuações mais altas, especialmente na dimensão de agressão passiva, com diferença significativa. Esses achados sugerem que a natureza do esporte, que exige alta motivação e combate direto, pode influenciar o desenvolvimento de traços como maquiavelismo, narcisismo, psicopatia e agressividade.

PALAVRAS-CHAVE: Taekwondo. Dark Triad. Agressão. Educação Esportiva.

RESUMEN: En los últimos años, la relevancia del rasgo de la Tríada Oscura en los estudios de personalidad en psicología ha abierto oportunidades para investigar los efectos del deporte en el desarrollo personal. Rasgos como la Tríada Oscura y la agresión son especialmente relevantes en disciplinas como el taekwondo, que exige alta motivación y enfrentamiento directo. Este estudio tiene como objetivo determinar los Rasgos de Personalidad Oscura y los niveles de agresión en atletas de taekwondo en Turquía, analizar diferencias según variables demográficas y explorar su relación. La muestra incluyó 307 atletas seleccionados aleatoriamente. Los datos se analizaron mediante escalas y el coeficiente de correlación de Pearson para evaluar las relaciones. Los resultados mostraron una correlación positiva y significativa ($r=0,319$) entre la Tríada Oscura y la agresión. Los atletas de contacto obtuvieron puntuaciones más altas en agresión pasiva que los de no contacto, mostrando diferencias significativas.

PALABRAS CLAVE: Taekwondo. Tríada Oscura. Agresión. Educación Deportiva.

Article submitted to the similarity system



Editor: Prof. Dr. Sebastião de Souza Lemes

Deputy Executive Editor: Prof. Dr. José Anderson Santos Cruz

INTRODUÇÃO

Sport is defined as one of the most important factors in the socialization of the individual, contributing to the physical, spiritual, and psychological development of the person. Today, from the economy to politics, from national unity to racism, from international solidarity and peace to advertising and leisure activities; in summary, it is stated that sport is a social institution with significant effects and outcomes in every sphere of society and among the interactions between societies with which individuals come into contact (Yetim, 2016).

When considering the social development framework of sports, the first aspect encountered is its effect on personality development. Within this scope, the development of a sense of friendship, teamwork, the emergence of leadership qualities, and the control of emotions such as aggression and fanaticism—which are described as negative behaviors—contribute directly to the socialization process of the individual, particularly fostering love and respect for oneself and others (Kılıçgil, 1988; Eroğlu, 1996).

Although it is stated that sports contribute to positive characteristics in many areas, they can also lead to the emergence of undesirable attitudes and behaviors in individuals. Especially in sports involving intense physical contact, personality traits determine the language and technique of communication. It is known that individuals express their behaviors and emotions by using their techniques and tactics, whether with or without physical contact. For this reason, the chosen field of sport serves as an important indicator. This situation is evaluated in terms of the positive or negative effects of sports on personality in the formation of a balanced personality (Biçer, 2006; Kuru, 2003).

It is known that the desire to be good and successful, inherent to human nature, is not always directed toward positive concepts. Particularly when the individual is involved in sports, his or her personality development may progress in two directions. Recent studies have also introduced the concept of the Dark Triad in the context of sports. Although this concept may initially carry a negative connotation, it actually helps individuals achieve their wishes and desires and can contribute positively to their development. The concept has been established in the literature as comprising Machiavellianism, narcissism, and psychopathy (Paulhus & Williams, 2002). Machiavellianism is defined as manipulation, excessive competitiveness, charm, strategy, behavioral flexibility, and deception, and involves the individual's sense of entitlement regarding their actions (Şahinler et al., 2021). Narcissism is said to reflect arrogance, self-importance, dominance, and a sense of superiority. Moreover, individuals with high levels of narcissism are defined as those who excessively love and admire themselves, crave approval, lack empathy, and feel entitled to everything in this regard (Fehr et al., 1992; Paulhus & Williams, 2002). Psychopathy is characterized by impulsivity, inconsideration, egocentrism, lack of empathy, anxiety, and aggression. Individuals with high levels of psychopathy

are described as those with little or no ethical and moral values, a weak sense of conscience, and uncontrolled behaviors who do not feel remorse (Arrigo & Shipley, 2001).

In recent years, extensive research has been conducted in the field of health (Kaya & Algin, 2022; Algin & Sarvan, 2024; Pekgor et al., 2024; Algin et al., 2024; Algin, 2024; Sekeroglu et al., 2025). One noteworthy detail in studies involving the Dark Triad is the emphasis—especially in sport psychology and positive psychology—on its role as a complementary personality trait to explain individuals' behaviors (Tazegül et al., 2013; Coulter et al., 2016; Laborde et al., 2017). Cruickshank and Collins (2015) highlighted in their research that professional athletes focus on these three traits to achieve their goals and employ them to manage their performance. It has been underlined that narcissistic tendencies increase feelings of success and recognition, as well as the individual's motivation to be accepted. Additionally, it is noted that narcissistic individuals do not exhibit a fear of success (O'Boyle et al., 2012; Allen et al., 2013). The behavior of Machiavellian individuals—who consider all means, including doping, to achieve their goals—is another observed pattern (Jonason & Webster, 2012; Martin, 2016; Furnham & MacRae, 2018). In summary, it has been determined that Dark Triad characteristics are more prevalent among athletes, and these traits appear to have a positive effect in competitive sports environments (Vaughan et al., 2019; Strout & Carter, 2015).

Based on the premise that not only physiological but also psychological analyses of athletic performance play an important role in improving results, it has been revealed that this influence sometimes enhances and sometimes impairs performance. The aim of this study is to determine the Dark Personality Traits and aggression levels of taekwondo athletes in Turkey, examine differences in terms of demographic variables, and reveal the relationship between these factors.

METHODOLOGY

The purpose of this study is to determine the Dark Personality Traits and aggression levels of individuals practicing taekwondo in Turkey, to examine the differences in terms of demographic variables, and to reveal the relationship between them. In this context, the data obtained in this research were evaluated using the SPSS 28.0 statistical package program. During the evaluation phase, descriptive statistics (mean and standard deviation), internal consistency findings (α), correlation analyses, differences according to demographic characteristics, and regression analyses were performed.

The population of this study consists of athletes who are engaged in the Taekwondo branch in Turkey and who continue their active sports life. A total of 307 athletes were randomly reached via Google Forms, and participation was voluntary. In this study, the "Personal

Information Form” developed by the researcher, the “Aggression Inventory” developed by İpek İter (Kiper) as a data collection tool, and the “Aggression Inventory” developed by Jones and Paulhus (2014) to determine the Dark Triad characteristics—the Short Dark Triad Scale (SD3), adapted by Şahin, Ağralı Ermiş, and Demirus (2018)—were used.

The Dark Triad Scale ($\alpha = 0.722$), consisting of a total of 27 items distributed across three dimensions—Machiavellianism ($\alpha = 0.663$), Narcissism ($\alpha = 0.719$), and Psychopathy ($\alpha = 0.598$)—was used to determine the levels of Dark Triad characteristics among athletes.

The Aggression Inventory used in the study was developed by Kiper (1984). It includes three subtests, comprising 30 items in total, which assess destructive aggression, assertiveness, and passive aggression. The internal consistency (Cronbach’s Alpha) reliability coefficient for the Aggression Inventory in this study was found to be 0.84.

Although not originally included in the inventory, an overall aggression score was calculated for each participant based on the total scores from all three subscales.

The “Personal Information Form” developed by the researcher to determine the personal characteristics of the taekwondo athletes was finalized after obtaining expert opinions and reviewing the relevant literature. It consists of three items. The Personal Information Form includes questions assessing sports age, the branch in which the athlete competes in Taekwondo, and their educational status.

FINDINGS

Table 1. Differences between mean scores according to Taekwondo Branch

	Which Taekwondo competition are you participating in?	N	Average	p
Machiavellianism (M)	Kyorugi	180	2,6370	0,084
	Poomsae	124	2,5260	
	Total	304		
Narcisism (N)	Kyorugi	180	2,6679	0,075
	Poomsae	124	2,5099	
	Total	304		
Psychopathy (P)	Kyorugi	180	3,3222	0,799
	Poomsae	124	3,2814	
	Total	304		
Dark Triad	Kyorugi	180	2,8704	0,163
	Poomsae	124	2,8047	
	Total	304		

Aggression	Kyorugi	180	3,5802	0,618
	Poomsae	124	3,5226	
	Total	304		
Disruptive	Kyorugi	180	3,8956	0,476
	Poomsae	124	3,8194	
	Total	304		
Passive	Kyorugi	180	3,8275	0,022
	Poomsae	124	3,4935	
	Total	304		
Asserviteness	Kyorugi	180	3,0183	0,078
	Poomsae	124	3,2548	
	Total	304		

Source: Created by the authors.

According to Table 1, no significant difference was observed between Kyorugi and Poomsae competitions for the variables Machiavellianism (M) and Narcissism (N). However, since the p-values are below a certain threshold, these results may need to be taken into account.

No significant difference was found between participants in Kyorugi and Poomsae competitions in the subscales of Psychopathy (P), Aggression, Dark Triad, and Destructive Aggression. Since the p-values are high, it can be stated that there is no significant difference between the groups regarding these characteristics.

For the Passive Aggression subscale, however, a significant difference was identified between participants in Kyorugi and Poomsae competitions.

Table 2. Differences between mean scores according to educational status

	Education level?	N	Average	p	Different Groups
Machiavellianism (M)	High School	81	2,4883	0,215	-
	License	173	2,6429		
	Postgraduate	53	2,6122		
	Total	307	2,5968		
Narcisism(N)	High School	81	2,4760	0,079	-
	License	173	2,6795		
	Postgraduate	53	2,5639		
	Total	307	2,6059		
Psychopathy(P)	High School	81	3,1632	0,042	High School<License
	License	173	3,3539		
	Postgraduate	53	3,3627		
	Total	307	3,3051		

Dark triad	High School	81	2,7174	0,005	High School<License High School<Post-graduate
	License	173	2,8977		
	Postgraduate	53	2,8728		
	Total	307	2,8458		
Aggression	High School	81	3,4498	0,054	-
	License	173	3,5498		
	Postgraduate	53	3,7767		
	Total	307	3,5626		
Distructive	High School	81	3,8148	0,121	-
	License	173	3,8081		
	Postgraduate	53	4,1566		
	Total	307	3,8700		
Passive	High School	81	3,3160	0,004	High School<License High School<Post-graduate
	License	173	3,7760		
	Postgraduate	53	4,0547		
	Total	307	3,7028		
Assertiveness	High School	81	3,2185	0,558	-
	License	173	3,0659		
	Postgraduate	53	3,1189		
	Total	307	3,1153		

Source: Created by the authors.

According to Table 2, no significant difference was detected between the athletes' education levels in terms of Machiavellianism (M), Narcissism (N), Aggressiveness, Destructiveness, and Assertiveness subscale scores.

A significant difference was found between the high school level and undergraduate level in the Dark Triad score averages, Psychopathy subscale, and Passive Aggression subscale ($p = 0.042$).

Table 3. Differences between the mean scores of the participants according to their sporting age

	How many years have you been a Taekwando athlete?	N	Average	p	Different Groups
Machiavellianism (M)	1-3	44	2,4823	0,178	-
	4-6	51	2,4749		
	7-9	2	2,5000		
	10+	210	2,6513		
	Total	307	2,5968		

Narcisism(N)	1-3	44	2,6035	0,037	1-3>4-6 4-6<10+
	4-6	51	2,3987		
	7-9	2	3,0000		
	10+	210	2,6529		
	Total	307	2,6059		
Psychopathy(P)	1-3	44	3,1364	0,003	1-3<10+ 4-6<10+
	4-6	51	3,1264		
	7-9	2	2,8333		
	10+	210	3,3884		
	Total	307	3,3051		
Dark Triad	1-3	44	2,6970	<0,001	1-3<10+ 4-6<10+
	4-6	51	2,7160		
	7-9	2	2,8889		
	10+	210	2,9081		
	Total	307	2,8458		
Aggression	1-3	44	3,4409	0,106	-
	4-6	51	3,3595		
	7-9	2	3,6667		
	10+	210	3,6364		
	Total	307	3,5626		
Disruptive	1-3	44	3,6818	0,256	-
	4-6	51	3,6745		
	7-9	2	4,2000		
	10+	210	3,9538		
	Total	307	3,8700		
Passive	1-3	44	3,5318	0,013	4-6<10+
	4-6	51	3,2176		
	7-9	2	4,4000		
	10+	210	3,8497		
	Total	307	3,7028		
Assertiveness	1-3	44	3,1091	0,621	-
	4-6	51	3,1863		
	7-9	2	2,4000		
	10+	210	3,1062		
	Total	307	3,1153		

Source: Created by the authors.

According to Table 3, no significant difference was detected between the participants' sports age and Machiavellianism, Aggressiveness, Destructive Aggression, and Assertiveness score averages.

However, a significant difference was found between the participants' sports age and Narcissism mean scores ($p = 0.037$). Athletes with 1–3 years of experience have a higher mean Narcissism score than those with 4–6 years of experience.

A significant difference was also detected between the participants' sports age and Psychopathy score average ($p = 0.003$). Athletes with 1–3 years and 4–6 years of experience appear to have lower Psychopathy scores than those with 10 years or more of experience.

Likewise, a significant difference was detected between the participants' sports age and Dark Triad score averages ($p < 0.001$), showing that athletes with 1–3 years and 4–6 years of experience had lower Dark Triad scores than those with 10 or more years of experience.

A significant difference was found between Passive Aggression, a sub-dimension of the Aggression Inventory, and the sports age of the participants ($p = 0.013$). Athletes with 4–6 years of experience have lower Passive Aggression scores than those with 10 or more years of experience.

DISCUSSION AND CONCLUSION

The evaluation of the relationship between the Dark Triad personality traits and aggression levels of Taekwondo athletes, together with some variables, was interpreted and discussed based on the literature.

It was determined that the participants' aggression tendencies and Dark Triad levels were at moderate levels. While the mean scores of Narcissism and Machiavellianism, which are among the Dark Triad subscales, were observed at low levels, the mean scores of Psychopathy were at a medium level. Similar results regarding Dark Triad characteristics in individuals who practice sports are reported in the literature (Vaughan et al., 2019; Strout & Carter, 2015). When examining the sub-dimensions of the Aggression Inventory, it was concluded that although the lowest values were in the Assertiveness sub-dimension, the scores were at moderate levels across all three sub-dimensions.

In this study, where the effects of Narcissism, Machiavellianism, and Psychopathy levels on aggression tendency were evaluated, it was found that each independent variable affected aggression tendencies statistically significantly and positively ($p < 0.05$). Similar to our results, Jones and Neira (2015) found relationships between Dark Triad traits and aggression tendencies (Greitemeyer, 2022; Book et al., 2015; Jones & Neira, 2015; Jones & Figueredo, 2013). When looking at the relationship between the aggression inventory sub-dimensions

of Taekwondo athletes and the Dark Triad sub-dimensions, significant relationships were revealed. Regarding the Narcissism sub-dimension, a positive and significant relationship was observed with total aggression tendency and only with the Destructive sub-dimension among its sub-dimensions. This suggests that narcissists' distorted perception of superiority may be a mechanism to protect their high egos from being threatened, frustrated, or disappointed.

Regarding the Machiavellianism and Psychopathy sub-dimensions, while there is a positive and significant relationship in the Destructive and Passive subscales, there is a negative and significant relationship in the Assertiveness subscale. In this sub-dimension, where being overly competitive, manipulative, and strategic is dominant, having a negative relationship with the Assertiveness sub-dimension—which is characterized by an impressive and open understanding of communication—may be an effective method for achieving the desired success. It suggests that being more passive and exhibiting destructive characteristics in order to avoid being harmed may be due to an instinct to protect oneself from possible harm that one might cause in the subscale of destructive aggression.

There is a positive and significant relationship with all three sub-dimensions of the Dark Triad. This may indicate that athletes who do not feel safe, are afraid of disappointment, and are likely to experience complex emotions may display negative behaviors in ways that society does not approve. These emotional complexities, seen in the nature of sports, can also be interpreted as more egoistic, manipulative, and aggressive attitudes during competition.

In the Passive Aggression sub-dimension, while a positive and significant relationship was found in the Machiavellianism and Psychopathy subscales, no positive but significant relationship was detected in the Narcissism subscale. The fact that the high ego required by narcissism does not align with passive aggression but instead manifests as a very competitive, strategic, impulsive, and anxious attitude suggests that these athletes are ambitious to win and focused on success.

In the Assertiveness sub-dimension, while there is no significant relationship with all three sub-dimensions of the Dark Triad, there is a negative relationship with the Machiavellianism and Psychopathy sub-dimensions. This can be explained by the fact that the Assertiveness sub-dimension, which tends to promote open communication, has no common ground with Dark Triad traits, since open communication is not a preferred style for individuals with Dark Triad characteristics. Studies conducted on the Dark Triad and aggression have produced similar results despite differing contexts (Noor et al., 2023; Japp, 2023; Junça Silva & Silva, 2023; Greitemeyer, 2022; Zhu & Jin, 2021; Knight et al., 2018; Barlett, 2016; Dervent, 2007; Afyon et al., 2005).

Kyorugi and Poomsae, branches of Taekwondo, are performed with and without contact, respectively. Considering this, it is observed that the Passive Aggression sub-dimension,

and partly the Machiavellianism and Narcissism sub-dimensions, reach higher values in the Kyorugi (contact) branch.

In line with our study, Cruickshank and Collins (2015) stated that individuals who engage in sports professionally focus on these three traits to achieve their goals and resort to these behaviors to manage their performance. The narcissistic approach increases feelings of success and appreciation and enhances the individual's motivation for acceptance. It is also noted that narcissistic individuals do not exhibit a tendency to avoid success (O'Boyle et al., 2012; Allen, 2013). The tendency of Machiavellians to consider any means permissible for their goals (including doping) is another behavior detected and aligns with our results (Jonason & Webster, 2012; Martin, 2016; Furnham & MacRae, 2018).

Considering the education levels of taekwondo athletes, a significant difference is observed in Dark Triad (DT) levels, especially in the Psychopathy sub-dimension and only in the Passive Aggression sub-dimension. The fact that the high school level scores are lower than the undergraduate and graduate levels can be interpreted as triggered by the increase in education level. This can be evaluated as the focus on success increasing with the rise in self-confidence, knowledge, and academic ambitions provided by education. When the literature is examined, similar results are observed (Alsheikh Ali, 2020; Ternes et al., 2019; Carton & Egan, 2017; Numin, 2021). When evaluated according to sports age, it is seen that these levels decrease with increasing experience in the DT averages, Psychopathy, and Passive Aggression sub-dimensions. This situation suggests that the decrease may occur due to the increase in self-confidence, belief, and maturity gained from accumulated experience.

It is an expected result in sports that self-control motivation increases as beginners reach certain successes and achieve results. Contrary to these results, Narcissism shows an inverse relationship with sports age. Increasing sports age results in decreased Narcissism levels. This can be explained by the self-confidence of an athlete who is just at the beginning of their journey and does not yet know what awaits them. It is expected that increasing awareness and experience may explain this situation (Florin et al., 2021; Ueno et al., 2017).

When the literature is examined, it is seen that the number of existing studies is limited. The fact that these data are based on individual reporting and are cross-sectional is the most important factor limiting their validity. Additionally, considering the multi-group comparison, sample sizes are partially limited.

The results obtained in studies with different populations vary. This points to how sports can change an individual's priorities and tendentially differentiate them.

REFERENCES

- Afyon, Y. A., Özkan, H., & Yıldız, S. M. (2005). Comparison of aggression levels of professional football teams. *Firat University Eastern Anatolia Region Researches*, 3(3).
- Allen, M. S., Greenlees, I., & Jones, M. (2013). Personality in sport: A comprehensive review. *International Review of Sport and Exercise Psychology*, 6(1), 184–208. <https://doi.org/10.1080/1750984X.2013.769614>
- Algin, A. (2024). Bibliometric analysis of research on “Gamification in Nursing” via visual mapping technique. *Cadernos de Educação, Tecnologia e Sociedade*, 17(se5), 219–229. <https://doi.org/10.14571/brajets.v17.nse5.219-229>
- Algin, A., & Sarvan, F. (2024). The effects of environmentally sensitive business practices on competitive advantage: A study on Antalya Organised Industrial Zone companies. *International Journal of Sports Technology and Science*, 2(1), 66–81.
- Algin, A., Yesilbas, H., & Kantek, F. (2024). The relationship between missed nursing care and nurse job satisfaction: A systematic review and meta-analysis. *Western Journal of Nursing Research*, 46(12), 980–988. <https://doi.org/10.1177/01939459241292038>
- Alsheikh Ali, A. S. A. (2020). Delinquency as predicted by dark triad factors and demographic variables. *International Journal of Adolescence and Youth*, 25(1), 661–675.
- Arrigo, B. A., & Shipley, S. (2001). The confusion over psychopathy (I): Historical considerations. *International Journal of Offender Therapy and Comparative Criminology*, 45(3), 325–344.
- Barlett, C. P. (2016). Exploring the correlations between emerging adulthood, dark triad traits, and aggressive behavior. *Personality and Individual Differences*, 101, 293–298.
- Biçer, T. (2006). *Psychology of championship*. Beyaz Publications.
- Book, A., Visser, B. A., & Volk, A. A. (2015). Unpacking “evil”: Claiming the core of the Dark Triad. *Personality and Individual Differences*, 73, 29–38.
- Carton, H., & Egan, V. (2017). The dark triad and intimate partner violence. *Personality and Individual Differences*, 105, 84–88.
- Coulter, T. J., Mallett, C. J., Singer, J. A., & Gucciardi, D. F. (2016). Personality in sport and exercise psychology: Integrating a whole person perspective. *International Journal of Sport and Exercise Psychology*, 14(1), 23–41. <https://doi.org/10.1080/1612197X.2015.1016085>
- Cruickshank, A., & Collins, D. (2015). Illuminating and applying “the dark side”: Insights from elite team leaders. *Journal of Applied Sport Psychology*, 27(3), 249–267. <https://doi.org/10.1080/10413200.2014.982771>

- Dervent, F. (2007). *Lise öğrencilerinin saldırganlık düzeyleri ve sportif aktivitelere katılımı ilişkisi* [Unpublished master's thesis]. Gazi Üniversitesi, Eğitim Bilimleri Enstitüsü, Beden Eğitimi ve Spor Öğretmenliği Anabilim Dalı.
- Eroğlu, F. (1996). *Behavioral sciences*. İstanbul.
- Fehr, B. A., Samson, D., & Paulhus, D. L. (1992). The construct of Machiavellianism: Twenty years later. In C. D. Spielberger & J. N. Butcher (Eds.), *Advances in personality assessment* (Vol. 9, pp. 77–116). Lawrence Erlbaum.
- Florin, V., Germina, C., Raluca, S., Alexandru, C., Alina, C., & Robert, M. (2021). Dark triad and aggression in a sport students Romanian sample. *Ovidius University Annals, Series Physical Education and Sport / Science, Movement and Health*, 21, 210–219.
- Furnham, A., & MacRae, I. (2018). The dark side of work values. *Current Psychology*, 1–7. <https://doi.org/10.1007/s12144-018-9873-z>
- Greitemeyer, T. (2022). The dark side of sports: Personality, values, and athletic aggression. *Acta Psychologica*, 223, 103500. <https://doi.org/10.1016/j.actpsy.2021.103500>
- Japp, P. (2023). *The relationship between the Dark Triad traits, aggression, and malevolent creativity in males and females* [Unpublished manuscript].
- Jonason, P. K., & Webster, G. D. (2012). A protean approach to social influence: Dark Triad personalities and social influence tactics. *Personality and Individual Differences*, 52(4), 521–526. <https://doi.org/10.1016/j.paid.2011.11.023>
- Jones, D. N., & Figueredo, A. J. (2013). The core of darkness: Uncovering the heart of the Dark Triad. *European Journal of Personality*, 27, 521–531. <https://doi.org/10.1002/per.1893>
- Jones, D. N., & Neria, A. L. (2015). The Dark Triad and dispositional aggression. *Personality and Individual Differences*, 86, 360–364. <https://doi.org/10.1016/j.paid.2015.06.021>
- Junça Silva, A., & Silva, D. (2023). Dark individuals appear to be better when good things happen to them: The moderating effect of micro-events on the relationship between the Dark Triad traits and counterproductive work behavior. *Personality and Individual Differences*, 203, 112006. <https://doi.org/10.1016/j.paid.2022.112006>
- Martin, L. (2016). *Sports performance measurement and analytics: The science of assessing performance, predicting future outcomes, interpreting statistical models, and evaluating the market value of athletes*. Pearson Education.
- Kaya, N., & Algin, A. (2022). Technical efficiency in public hospitals: A meta-regression analysis. *Eskişehir Osmangazi University Journal of Economics and Administrative Sciences*, 17(3), 810–821. <https://doi.org/10.17153/oguiibf.1094736>

- Kılıçgil, E. (1988). *Social environment and sports relationship*. Ankara.
- Knight, N. M., Dahlen, E. R., Bullock-Yowell, E., & Madson, M. B. (2018). The HEXACO model of personality and Dark Triad in relational aggression. *Personality and Individual Differences*, 122, 109–114.
- Kuru, E. (2003). Personality characteristics of physical education and sports students with different status. *Gazi University Faculty of Education Journal*, 23(1).
- Laborde, S., Guillén, F., Watson, M., & Allen, M. S. (2017). The light quartet: Positive personality traits and approaches to coping in sport coaches. *Psychology of Sport and Exercise*, 32, 67–73. <https://doi.org/10.1016/j.psychsport.2017.06.005>
- Noor, N., Farooq, M., & Malik, S. (2023). Dark personality triads and aggression. *Journal of Business and Management Research*, 2(2), 86–102.
- Mumin, N. (2021). Do the Dark Triad personality traits buffer against stress? A study among students of higher education in Malaysia. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 6(12), 195–204.
- Özsoy, O. (2010). *Elit müsabık taekwondocular ile poomseciler arasında fiziksel fizyolojik farklılıkların tespiti ve incelenmesi* [Unpublished master's thesis]. Gazi Üniversitesi, Ankara.
- Paulhus, D. L., & Williams, K. M. (2002). The Dark Triad of personality: Narcissism, Machiavellianism, and psychopathy. *Journal of Research in Personality*, 36(6), 556–563. [https://doi.org/10.1016/s0092-6566\(02\)00505-6](https://doi.org/10.1016/s0092-6566(02)00505-6)
- Pekgor, M., Algin, A., Toros, T., Serin, E., Kulak, A., & Tek, T. (2024). Wearable sensor technology in health monitoring and sport psychology education. *Cadernos de Educação, Tecnologia e Sociedade*, 17(se5), 202–218. <https://doi.org/10.14571/brajets.v17.nse5.202-218>
- Sekeroglu, M. O., Pekgor, M., Algin, A., Toros, T., Serin, E., Uzun, M., Cerit, G., Onat, T., & Ermis, S. A. (2025). Transdisciplinary innovations in athlete health: 3D-printable wearable sensors for health monitoring and sports psychology. *Sensors*, 25(5), 1453. <https://doi.org/10.3390/s25051453>
- Strout, S. L., & Carter, G. L. (2015). Playing in the dark: The Dark Triad and competitive sports. *Ninth Annual Conference on the Evolutionary Behavioral Sciences*, 23–24.
- Şahinler, Y., Ulukan, M., & Ersoy, A. (2021). Sporcularda insan doğasının kötü yönü Karanlık Üçlü: Narsisizm, Makyavelizm ve Psikopatinin incelenmesi. *Sportif Bakış: Spor ve Eğitim Bilimleri Dergisi*, 8(3), 356–373.

- Tazegül, Ü., Soykan, A., & Sancaklı, H. (2013). Investigating the relationship between narcissism and motivation level of wrestlers. *Global Advanced Research Journal of Social Science*, 2(2), 27–33.
- Ternes, M., Babin, C., Woodworth, A., & Stephens, S. (2019). Academic misconduct: An examination of its association with the Dark Triad and antisocial behavior. *Personality and Individual Differences*, 138, 75–78.
- Ueno, Y., Shimotsukasa, T., Suyama, S., & Oshio, A. (2017). Correlations between competitive sports' characteristics and the Dark Triad. *Journal of Physical Education and Sport*, 17(2), 533–536.
- Vaughan, R., Madigan, D. J., Carter, G. L., & Nicholls, A. R. (2019). The Dark Triad in male and female athletes and non-athletes: Group differences and psychometric properties of the Short Dark Triad (SD3). *Psychology of Sport and Exercise*, 43, 64–72. <https://doi.org/10.1016/j.psychsport.2019.01.002>
- Zhu, Y., & Jin, C. (2021). A meta-analysis of the relationship between the Dark Triad and aggressive behaviors. *Advances in Psychological Science*, 29(7), 1195.

CRediT Author Statement

Acknowledgements: No.

Funding: This research did not receive any financial support.

Conflicts of interest: There is no conflict of interest.

Ethical approval: The work respected ethics during the research.

Data and material availability: The data and materials used in the work are not publicly available for access.

Authors' contributions: One author contributed equally to the work.

Processing and editing: Editora Ibero-Americana de Educação

Proofreading, formatting, normalization and translation

