DARK TRIAD AND AGGRESSION IN A SPORT STUDENTS ROMANIAN SAMPLE

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Abstract

The Dark Triad of personality traits (narcissism, Machiavellianism and psychopathy) are factors of interest in sports psychology research through the influences they can exert on the behavior of athletes. This study analyzes the relationship between the Dark Triad of personality and aggression among sports students. The study was attended by 168 students enrolled at the Faculty of Physical Education and Sports in Craiova, aged between 18 and 30 years, M = 21.52, SD = 2.20, of which 74 are males and 94 females, 100 practicing individual sports and 68 practicing team sports. The instruments used wereThe Dirty Dozen: A Concise Measure of the Dark Triadand Aggression Questionnaire. The results showed that there were gender differences in the types of aggression, so that women had higher scores than men in verbal aggression, anger and hostility, but not in physical aggression. The Dark Triad of personality traits has been shown to be significant predictors of all types of aggression (physical aggression, verbal aggression, anger and hostility). Simultaneously, the moderating role of gender, age and type of sport practiced in the relationship between accentuated personality traits and aggression was analyzed. It was observed that gender does not moderate this relationship, the type of sport-practiced moderate the relationship between accentuated personality traits and physical aggression, and age moderates the relationship between accentuated personality traits and verbal aggression. Based on these results, psycho-educational programs can be developed to temper the aggression of sports students and to be part of the academic curriculum or specialized training programs. In this way, the foundations can be laid for a harmonious construction not only physically, but also mentally of the Romanian athletes.

Key words: Dark Triad, aggression, sports students.

Introduction

Personality factors are essential traits of athletes and play an important role in achieving performance (Allen, Greenless, & Jones, 2013). An important set of personality traits is the Dark Triad (Paulhus & Williams, 2002), numerous studies showing that athletes score higher than non-athletes on all of these traits (Vaughan, Madigan, Carter, & Nicholls, 2019).

The Dark Triad refers to three accentuated personality traits that are at the same time separate and correlated with each other: narcissism, Machiavellianism and psychopathy. Narcissism reflects the grandeur and feelings of superiority and justification (Maples, Lamkin, & Miller, 2014), Machiavellianism is described by manipulation, self-service, and deception, and psychopathy is defined by impulsivity, lack of empathy, and anxiety 2002). Taken together, the three personality traits describe a negative, antagonistic, malicious, and egocentric character (Furnham, Richards, Rangel, & Jones, 2014), which is why it is often positively associated with aggression, with immoral decision making. and with difficulties in maintaining quality personal relationships (Muris,

Merckelbach, Otgaar, & Meijer, 2017).

The Dark Triad personality traits may also bring benefits to athletes, especially to performance athletes, such as the initiative to achieve personal goals and high performance at the expense of the goals and emotions of others, thus increasing the chances of success (Carter, Montanaro, Linney, & Campbell , 2015). However, the Dark Triad has not been sufficiently studied in relation to other traits of athletes, so this study aims to contribute to the literature by relating the dark personality traits with aggression.

The presence of these traits among athletes can be beneficial. Thus, high Machiavellianism, narcissism and psychopathy facilitate a better adaptation to the pressure determined by participating in competitions, a higher level of self-confidence, increased resilience, stronger coping strategies, involvement and high power of concentration (Vaughan, Hanna, & Breslin, 2018).

Aggression is defined as intentional behavior manifested to harm another person (DeWall, Anderson, & Bushman, 2012) There are several forms of aggression, such as physical aggression, verbal aggression, and relational

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aggression. Physical aggression involves physical actions with the purpose of injuring, such as hitting, pushing, beating, abruptly, or with the purpose of destroying a person's property, such as breaking windows or scratching cars. Verbal aggression uses verbal behavior to hurt others, such as shouting, calling names, or spreading rumors. Relational aggression is that behavior aimed at damaging a person's social relationships, such as lying or exposing compromising photographs (Allen & Anderson, 2017).

Studies on gender differences in aggression have generally obtained mixed results, with men being more physically aggressive and women more verbally aggressive. Anger and hostility did not show significant gender differences (Archer, 2004). Akhtar et al. (2015) conducted a study in which they compared the levels of aggression among adolescents, the results obtained by them showing that boys are more aggressive than girls. On the other hand, Edalati et al. (2010) showed that there are no gender differences in terms of aggression. Bettencourt and Miller (1996) have shown that men are much more aggressive than women when provoked. Fares et al. (2011) found that boys are more easily involved than girls in acts of physical aggression. Taking into account the above, we aim to verify whether there are gender differences among athletes in terms of four types of aggression: physical aggression, verbal aggression, anger and hostility. We formulate the first hypothesis of this study:

H1. There are gender differences in aggression among athletes.

H1a. Men have higher levels of physical aggression than women.

H1b. Men have lower levels of verbal aggression, anger and hostility than women.

The general model of aggression suggests, among other things, a dynamic, episodic and contextual approach. This model separates the sequences of aggressive behavior into three phases: inputs, routes and results. Inputs refer to how personal and situational factors determine aggressive behavior. Routes refer to how inputs affect emotions, cognitions, and activation to create a certain internal state. The results refer to the way in which the internal state influences the appraisal of the situation and the decision-making that will later lead to either a wise or an aggressive behavior (Allen & Anderson, 2017).

Referring to inputs, these are actually personal factors or individual characteristics that influence how the individual reacts to certain situations. Most are relatively contextually and temporally stable, as long as the person uses the same scenarios, schematas, and knowledge structures (Mischel & Shoda, 1995). In this sense, personality can be considered the sum of the

cognitive structures of the person, and aggressive structures predispose the person to be aggressive. Personal traits that are risk factors for aggression include unstable self-esteem, narcissism, self-image, long-term goals, beliefs in self-efficacy toward aggressive and non-aggressive behaviors, normative beliefs toward aggression, attitudes toward violence, hostile attribution, expectation, and perception biases, cultural stereotypes, moral justifications for violence, externally placing responsibility (Anderson & Carnagey, 2004).

Starting from the general model of aggression and from the idea that the inputs that determine aggressive behavior can be found in the personality factors of individuals, we aim to verify whether the three dimensions of the Dark Triad are significant predictors of aggression, formulating the following hypotheses:

H2. The Dark Triad of personality is a significant predictor of aggression.

H2a. The Dark Triad of personality is a significant positive predictor of physical aggression.

H2b. The Dark Triad of personality is a significant positive predictor of verbal aggression.

H2c. The Dark Triad of personality is a significant positive predictor of anger.

H2d. The Dark Triad of personality is a significant positive predictor of hostility.

Socio-demographic variables such as gender, age or sport practiced can interact with accentuated personality traits and have significant effects on the level and type of aggression of athletes. The way in which personality factors are associated with certain levels and types of aggression can be modulated both by age, which carries with it the imprint of life experiences, but also by the sport practiced, which involves more or less interaction with others.

Among athletes, aggression is manifested in different forms, from direct physical aggression to subtle aggression aimed at restricting the rights of others (Mashhoodi et al., 2013). A study by Chris (2004) showed that there are a number of factors that determine the type of aggression shown by athletes, including cultural and environmental factors. Silva (1984) suggests that aggressive acts in sport are intentional and observable, performed in order to injure. Instrumental aggression is manifested when an athlete intends to falsify a score or obtain an undeserved performance. Hostility is manifested in order to harm another athlete. Kemler (1988) studied the effects of different sports on aggressive behavior. The results obtained showed that men who practice contact sports have lower levels of instrumental aggression and higher levels of reactive aggression than women who practice sports other than contact sports. Thus, the gender could moderate the

relationship between personality factors and aggression manifested by athletes.

Mashoodi et al. (2013), in a study on the aggressiveness of athletes, showed that younger athletes have higher levels of aggression than older ones. Regarding the contextual variables, the relationship between the sport practiced and aggression proved to be different depending on the nature of the sport, whether or not it is contact or whether it is individual or team (Endresen & Olweus, 2005; Maxwell, 2004). Another variable that can influence the relationship between personality and aggression among athletes is the orientation towards competition, in this case amateur athletes being more aggressive than performance athletes (Smith, 1975).

Although there are many variables that can intervene in the manifestation of aggression in athletes, there are not enough studies to clarify these relationships. In the present study we aim to test the moderating role of gender, age and type of sport practiced in the relationship between the Dark Triad factors and aggression. We thus establish the following hypotheses:

H3. The gender moderates the relationship between the Dark Triad and aggression.

H4. The age moderates the relationship between the Dark Triad and aggression.

H5. The type of sport practiced moderates the relationship between the Dark Triad and aggression.

Methods

Results

Descriptive statistics

Descriptive statistics is presented in Table 1.

The study was attended by 168 students enrolled at the Faculty of Physical Education and Sports in Craiova, aged between 18 and 30 years, $M = 21.52$, $SD = 2.20$, of which 74 are males and 94 females, 100 practicing individual sports and 68 practicing team sports. The questionnaires were applied online between April and June 2020, the duration of their completion being approximately 20 minutes. They were inserted in a Google form in which the first sections contained informed consent and consent to the processing of personal data.

Dark personality traits were measured with The Dirty Dozen: A Concise Measure of the Dark Triad (Jonason & Webster, 2010). The questionnaire contains 12 items scored on a seven points Likert scale steps where 1 - untrue and 7 - totally true, four items for each of the dimensions of Machiavellianism, narcissism and psychopathy. Example item: "I tend to be callous or insensitive."

Aggression was measured with the Aggression Questionnaire (Buss & Perry, 1992). The questionnaire includes 29 items scored on a five points Likert scale, where 1 - does not characterize me at all and 5 - characterizes me exactly. The instrument measures four forms of aggression: physical aggression, verbal aggression, anger and hostility. Example item: "I threatened some of the people I know."

Socio-demographic variables were collected through a list of questions related to gender, age, sport practiced, year of study, type of family of origin, number of siblings.

Table 1. Means, standard deviations, Cronbach Alpha coefficients and Pearson correlations among variables

	M	SD	α	MAC	NAR	PSI	DT	PA	VA	AN	HO
MAC	7.40	3.58	.81	1							
NAR	11.07	4.31	.86	.62**	1						
PSI	8.48	2.95	.64	.50**	.41**	1					
DT	26.95	8.96	.85	.86**	.86**	.73**	1				
PA	16.30	6.58	.83	.51**	.37**	.35**	.50**	1			
VA	13.09	4.03	.74	.54**	.47**	.35**	.55**	.59**	1		
AN	16.59	6.14	.82	.47**	.37**	.32**	.47**	.66**	.74**	1	
HO	20.80	6.67	.82	.46**	.36**	.30**	.46**	.50**	.66**	.69**	1

**: $p < .05$, MAC – Machiavelianism, NAR – Narcisism, PSI – Psychopathy, DT – Dark Triad, PA – Physical Aggression, VA – Verbal aggression, AN – Anger, HO - Hostility

Hypotheses testing

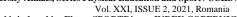H1. There are gender differences in aggression among athletes.

H1a. Men have higher levels of physical aggression than women.

H1b. Men have lower levels of verbal aggression, anger and hostility than women.

To test this hypothesis, an independent samples t test was performed.

Table 2. Mean scores for aggression according to athletes' gender

	Gender	N	M	SD
Physical aggression	Male	74	16.97	6.26
	Female	94	15.77	6.81
Verbal aggression	Male	74	12.41	3.13
	Female	94	13.63	4.57
Anger	Male	74	15.24	5.03
	Female	94	17.65	6.72
Hostility	Male	74	19.35	6.01
	Female	94	21.94	6.97

Table 3. Independent samples t test

		F	Sig.	t	df	p	MD	SED	95% CI Lower	Upper
Verbal aggression	Equal variances not assumed	4.25	.04	-2.05	163.15	.04	-1.22	.60	-2.40	-.05
Anger	Equal variances not assumed	5.83	.02	-2.65	165.63	.01	-2.41	.91	-4.20	-.62
Hostility	Equal variances assumed	2.43	.12	-2.53	166	.01	-2.59	1.02	-4.60	-.57

It is observed that there are significant gender differences, so that verbal aggression is higher in women than in men, $M = 13.63$, $SD = 4.57$ compared to $M = 12.41$, $SD = 3.13$, $t (163.15) = -2.05$, $p <. 05$, anger is higher in women than in men, $M = 17.65$, $SD = 6.72$ compared to $M = 15.24$, $SD = 5.03$, $t (165.63) = -2.65$, $p <.05$, hostility is higher in women than in men, $M = 21.94$, $SD = 6.97$ compared to $M = 19.35$, $SD = 6.01$, $t (166) = -2.53$, $p <.05$. Regarding physical aggression, no significant differences were observed. Thus, the H2 hypothesis is only partially supported by the analyzed data.

H2. The Dark Triad of personality is a significant predictor of aggression.

H2a. The Dark Triad of personality is a significant positive predictor of physical aggression.

H2b. The Dark Triad of personality is a significant positive predictor of verbal aggression.

H2c. The Dark Triad of personality is a significant positive predictor of anger.

H2d. The Dark Triad of personality is a significant positive predictor of hostility.

To test these hypotheses, a series of multiple linear regression analyzes were performed having as predictors the three accentuated personality traits and as dependent variables the four types of aggression.

Table 4. Linear regression analysis for Dark Triad of personality predicting physical aggression

Model		Unstandardized Coefficients B	SE	Standardized Coefficients Beta	t	Sig.
1	(Constant)	7.33	1.49		4.92	.00
	Machiavelianism	.75	.17	.41	4.54	.00
	Narcisism	.10	.13	.07	.79	.43
	Psychopathy	.27	.17	.12	1.54	.13

Dependent Variable: Physical aggression, $R^2 = .28$

The three personality factors are responsible for 27.6% of the variation of physical aggression, the regression equation being statistically significant, $F (3, 164) = 20.85$, $p <.01$. Of the three factors, only Machiavellianism is a significant positive predictor of physical aggression, $\beta = .41$, $t (168) = 4.54$, $p <.01$.

Table 5. Linear regression analysis for Dark Triad of personality predicting verbal aggression

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	SE	Beta	t	Sig.
1	(Constant)	7.01	.88		7.93	.00
	Machiavelianism	.42	.10	.37	4.24	.00
	Narcisism	.19	.08	.21	2.45	.01
	Psychopathy	.10	.10	.07	.99	.32

Dependent Variable: Verbal aggression, $R^2 = .32$

The three personality factors are responsible for 32% of the variation of verbal aggression, the regression equation being statistically significant, $F_{(3, 164)} = 25.67$, p <.01. Of the three factors, only Machiavellian is a significant positive predictor of verbal aggression, $\beta = .37$, $t_{(168)} = 4.24$, p <.01 and narcissism, $\beta = .21$, $t_{(168)} = 2.45$, p <. 05.

Table 6. Linear regression analysis for Dark Triad of personality predicting anger

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	SE	Beta	t	Sig.
1	(Constant)	8.64	1.42		6.07	.00
	Machiavelianism	.61	.16	.36	3.85	.00
	Narcisism	.16	.12	.11	1.28	.20
	Psychopathy	.20	.17	.10	1.20	.23

Dependent Variable: Anger, $R^2 = .24$

The three personality factors are responsible for 24% of the variation in anger, the regression equation being statistically significant, $F_{(3, 164)} = 17.24$, p <.01. Of the three factors, only Machiavellian is a significant positive predictor of anger, $\beta = .36$, $t_{(168)} = 3.85$, p <.01.

Table 7. Linear regression analysis for Dark Triad of personality predicting hostility

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	SE	Beta	t	Sig.
1	(Constant)	12.50	1.56		8.02	.00
	Machiavellianism	.661	.17	.35	3.79	.00
	Narcisism	.17	.14	.11	1.25	.21
	Psychopathy	.18	.18	.08	1.01	.31

Dependent Variable: Hostility, $R^2 = .23$

The three personality factors are responsible for 23% of the hostility variation, the regression equation being statistically significant, $F_{(3, 164)} = 16.03$, p <.01. Of the three factors, only Machiavellianism is a significant positive predictor of hostility, $\beta = .35$, $t_{(168)} = 3.79$, p <.01.

Taking into account these results, we can say that the H2 hypothesis is partially supported by the analyzed data.

H3. The gender moderates the relationship between the Dark Triad and aggression.

In order to test this hypothesis, a moderation analysis was performed having as predictor the Dark Triad calculated as the sum of the three component dimensions, as dependent variables, alternatively, the four types of aggression and as a moderating variable gender.

Table 8. Moderation estimates for gender in the relationship between Dark Triad and verbal aggression

95% CI

	Estimate	SE	Lower	Upper	Z	p
DT	.24	.03	.18	.29	8.31	< .001
Gender	1.07	.51	.08	2.07	2.12	.034
DT ✻ Gender	.14	.06	.03	.26	2.47	.013

Gender moderates the relationship between Dark Triad and verbal aggression, the moderation estimate being β = .14, CI95% (. 03, .26), Z = 2.47, p <.05. The feminine gender leads to an intensification of the positive association between Dark Triad and verbal aggression, β = .31, CI95% (. 23, .38), Z = 8.06, p <.01.

The gender fails to moderate the relationship between the Dark Triad and other forms of aggression. This result leads us to state

that the H3 hypothesis is only partially supported by the analyzed data.

H4. The age moderates the relationship between the Dark Triad and aggression.

In order to test this hypothesis, a moderation analysis was performed having as predictor the Dark Triad calculated as the sum of the three component dimensions, as dependent variables, alternatively, the four types of aggression and age as moderating variable.

Table 9. Moderation estimates for age in the relationship between Dark Triad and verbal aggression

			95% CI			
	Estimate	SE	Lower	Upper	Z	p
DT	.25	.03	.19	.30	8.69	< .001
Age	-.04	.04	-.12	.04	-1.00	.317
DT ✻ Age	-.01	.01	-.02	-.01	-2.32	.020

Age moderates the relationship between Dark Triad and verbal aggression, the moderation estimate being β = -.01, CI95% (-. 02, -.01), Z = -2.32, p <.05. As age increases, the relationship between Dark Triad and verbal aggression decreases, thus, at low levels of age, β = .31, CI95% (. 23, .40), Z = 7.50, p <.01, at average levels. of age, β = .25, CI95% (. 19, .30), Z = 8.55, p <.01, and at high levels of age, β = .18, CI95% (. 10, .26), Z = 4.54, p <.01.

Age fails to moderate the relationship between the Drak Triad and other forms of aggression. This result leads us to state that the H4

hypothesis is only partially supported by the analyzed data.

H5. The type of sport practiced moderates the relationship between the Dark Triad and aggression.

In order to test this hypothesis, a moderation analysis was performed having as predictor the Dark Triad calculated as the sum of the three component dimensions, as dependent variables, alternatively, the four types of aggression and as moderating variable the type of sport practiced (individual or team).

Table 9. Moderation estimates for sport type in the relationship between Dark Triad and physical aggression

			95% CI			
	Estimate	SE	Lower	Upper	Z	p
DT	.36	.05	.26	.45	7.45	< .001
Age	.80	.87	-.89	2.50	.93	.353
DT ✻ Age	-.32	.10	-.52	-.12	-3.17	.002

The sport practiced moderates the relationship between Dark Triad and physical aggression, the moderation estimate being β = -.32, CI95% (-. 52, -.12), Z = -3.17, p <.01. Practicing team sports leads to a decrease in physical aggression, so that in athletes who practice team sports the intensity of the relationship between Dark Triad and physical aggression decreases, β = .20, CI95% (. 06, .34), Z = 2.72 , p <.01.

The sport practiced fails to moderate the relationship between Drak Triad and other forms of aggression. This result leads us to state that the H5 hypothesis is only partially supported by the analyzed data.

Discussion

Through hypothesis H1 it was shown that women have higher scores than men in verbal aggression, anger and hostility, and in the case of physical aggression no significant differences were observed. This results can be attributed to the fact that women in our research group have lower levels of tolerance for frustration, which can lead to forms of aggression such as verbal, anger and hostility. However, verbal aggression is specific to women who prefer to choose this form of aggression to compensate for differences in strength compared to men. In general, the results of studies in this field show that men athletes are more aggressive than women, but there are also studies that have found that women have higher levels of aggression (Berrebi, 2018).

Through the H2 hypothesis, it was found that Machiavellianism is a significant positive predictor of physical aggression, anger and hostility, and Machiavellianism and narcissism are significant positive predictors of verbal aggression. These results are consistent with the general model of aggression which postulates that multiple factors are involved in triggering aggression, but last but not least personal factors. Machiavellianism leads to aggression in that people with high levels of Machiavellianism are usually willing to compromise in order to manipulate others, to achieve success, at the expense of others, and to use those they come in contact with. Narcissism contributes to verbal aggression through the reactions that people with high levels of narcissism can manifest when their Ego is attacked. Similar results were obtained by Jones and Neria (2015), Book et al. (2015), Lee and Ashton (2012) or Pailing et al. (2014).

Through hypotheses H3, H4 and H5 it was shown that gender and age moderate the relationship between Dark Triad and verbal aggression, and the sport practiced moderates the relationship between Dark Triad and physical aggression. The frustration-aggression theory (Dollard, Doob, Miller, Mowrer, & Sears, 1939) argues that aggression occurs as a result of goal obstruction or frustration. At the same time, previous failures or frustrating experiences can lead to ruminating and thus to aggression.

The interaction between the female gender and Machiavellianism has the effect of increasing the level of verbal aggression, anger and hostility. This can be attributed to the fact that women with high levels of Machiavellian use more treacherous methods of resolving personal frustrations or those caused by the interactions in which they engage.

Regarding the moderating role of age, it mitigates the effects that Machiavellian exerts on aggression. Age brings with it a certain wisdom, but also a maturation that involves the exercise of self-control. Thus, even a Machiavellian person can control his impulses.
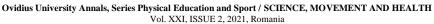
Also, the sport practiced interacts with Machiavellianism having specific effects on physical aggression, in the sense that in athletes who practice individual sports Machiavellian traits have stronger effects on physical aggression than in those who practice team sports. This can be explained by the fact that in individual sports the spirit of competition is rather self-centered, and the desire for success can be an end in itself, for which athletes would do anything to achieve it. In team sports, a certain group cohesion is created, the spirit of competition is shared with the team members, and collaboration is essential for success. Thus, despite Machiavellian malice, athletes who practice team sports tend to be less aggressive because their success depends on their good team relationships.

Conclusions

The results of this study highlight the role of Dark Triad personality traits in the manifestation of aggression in athletes. It has been observed that women are more aggressive than men, that Machiavellianism and narcissism are positively associated with aggression, and that gender, age, and sport moderate the relationship between Dark Triad traits and aggression. These results can be used to help athletes develop personally, temper their aggressive impulses and increase their tolerance for frustration. Specific programs can be developed to track the evolution of athletes so that their desire for performance or possible failures and conflicts do not affect their well-being. These programs can be oriented towards the development of positive character traits and a high level of sportsmanship, and this task falls to teachers and coaches. Beyond the personality factors of athletes, positive education can contribute to personal growth and the development of athletes' resilience.

Limitations and further directions for research

One of the limitations of this study may be that the data were collected during the COVID-19 pandemic, which could change the responses of

athletes, who are in isolation, in conditions of online learning and limiting social interactions. A future direction of research could be to conduct a longitudinal study and to consider the results of this study a baseline level, so that the evolution of the level of aggression of athletes can be observed.

Another limitation of the study could be the disregard of other variables that could have intervened in the relationship between Dark Triad traits and aggression, such as the number of competitions in which athletes participated, the level of performance achieved or the quality of relationships with teachers and coaches. These may be the subject of further studies.

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