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Article

# The Effect of Trainer Behaviors on Athletes' Anger and Aggression Levels

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**Abstract:** The purpose of this study is to investigate the effect of trainer behaviors on the anger and aggression levels of athletes. This study was conducted with 748 athletes with an active license who are over 18 years of age and participate in individual and team sports branches. In this study, the "Coaching Behavior Assessment Questionnaire" and the "Competitive Aggressiveness and Anger Scale" were used as data collection tools. The study results showed that athletes' levels of evaluation of the trainers' behaviors were high, while the levels of aggressiveness and anger in sports were low. It was determined that there is a negative low-level relationship between the athletes' evaluation levels of the trainers' behaviors and the aggressiveness and anger levels in sports and that the trainer's behaviors predict the anger and aggressiveness levels of the athletes by 9% and 6%, respectively. The results of this study show that the attitudes and behaviors of trainers can affect the emotional states of athletes and have the potential to increase or decrease their anger and aggressiveness levels. Trainers who exhibit positive, supportive, and modeling behaviors help create a healthy sports environment and help athletes maintain emotional balance.

**Keywords:** trainer; athlete; anger; aggressiveness

## 1. Introduction

In the field of sports, trainers and athletes are related to each other for individual sports or team sports, and this relationship can be one of the most important factors determining the success or failure of an athlete or team [1]. Trainers should not only plan training programs and prepare the team for competitive competitions but also motivate the athletes, develop an emotional environment within the team, and maintain a learning environment that facilitates growth and the achievement of goals [2]. In this learning environment, there is a trainer-athlete relationship, a relationship between the athlete and the trainer in which emotions, thoughts, and behaviors affect each other. This relationship includes the interaction, communication, and dynamics of the relationship between the athlete and the trainer. The trainer's leadership style, communication skills, guidance, and approach have direct effects on the athlete [3]. Mallet [4] stated that the sports environment basically consists of the relationship between the trainer, the athlete, the competition, and the training environment. Trainers who are engaged in individual and team sports not only increase the performance of the athletes but also have the motivation to enable the athletes to positively improve their behaviors, such as anger and aggressiveness, in competitions [5]. Some negative behaviors of trainers may reduce athlete satisfaction and cause disappointment and fear of failure. Such a case can lead the athlete to avoid taking risks and increase the possibility of making mistakes by increasing the anxiety level. Likewise, undesirable behaviors in such situations can lead to feelings of anger and aggressiveness and trigger discipline problems [6]. Danilewicz [7] argues that anger and aggressiveness in sports are mainly caused by the pressure exerted on the athlete by the family and/or

trainer [7]. Athletes with high levels of anger and aggressiveness also tend to exhibit behaviors contrary to sporting rules, such as cheating or harming another player [8]. Predominantly, male athletes express their anger more frequently in the form of verbal and physical aggressiveness. Another reason for anger and aggressiveness in sports is attributed to the learning process that occurs during participation in sports [9], which is why anger and aggressiveness can be tolerated in sports, which is a social phenomenon. It has been observed that some behaviors exhibited by athletes can turn into acts of anger and aggression during competitions. Moreover, studies show that anger and aggressive behaviors differ according to the type of sport. Athletes participating in individual sports generally exhibit lower levels of aggressiveness than those participating in team sports [9]. Athletes, in particular, may resort to verbal or physical aggression to intimidate their weaker opponents. If such behavior goes unpunished [7], it can cause them to lose focus on their goal or to be disqualified [10].

While anger and aggression can be seen at every stage of sports, they can also affect athletes of all age categories [11]. Factors such as technical and tactical abilities, psychological state, training time, and efficiency of athletes in this age category play a role in achieving success. However, the most important factor is that the trainers know the athletes and their needs. Trainers understand the shortcomings and needs of the athletes and provide the appropriate conditions. In this way, negative behaviors such as anger and aggressiveness are prevented [12]. A trainer combines the knowledge of sports physicians, scientists, and psychologists with their own experience and guides athletes to achieve high levels of physical and emotional (psychological) performance. In this process, the trainer is in direct contact with the athlete throughout a long training process and facilitates the management of emotional factors such as anger and aggressiveness [13]. Trainers have both positive and negative effects on their athletes [14]. Therefore, trainers should encourage their athletes to adopt sports as a philosophy of life and support the lifelong continuation of sports [12].

In conclusion, the examination of trainer-athlete levels shows that factors such as anger and aggressiveness have a determinant effect on the performance of athletes. This study reveals the deficiencies in this regard, particularly in Türkiye. Analyzing the relationship between perceived trainer behaviors, anger and aggressiveness levels, and athletes' performance can provide important information for determining effective training strategies and increasing the success levels of athletes. Therefore, further research and development of trainer-athlete relationships are important for taking negative factors such as anger and aggressiveness under control. The purpose of this study is to investigate the effect of trainer behaviors on the anger and aggressiveness levels of athletes. In our study, we focused on a sample that included the determination of anger and aggressiveness levels in athletes who are active in different sports branches. We used the survey method to collect the data and scales and observation methods to measure trainer behaviors.

## 2. Materials and Methods

### *Research Model*

This study aimed to accurately describe an existing situation by using a relational screening model. A relational screening model is a model used to determine the relationship between variables and the degree of change [15]. The purpose of the study is to examine the relationship between anger and aggressiveness levels and trainer behaviors. This model makes it possible to understand and evaluate the relationship between these variables.

### *Participants*

The population of the study consisted of athletes who are over the age of 18, have an active license, and engage in individual and team sports in 14 provinces (Kars, Erzurum, Ardahan, Ağrı, Muş, Bingöl, Bitlis, Erzincan, Tunceli, Van, Malatya, Elazığ, Hakkari and Iğdır) in the East Anatolia region in Türkiye. Although the smallest sample (with a 95% confidence level and a 5% confidence interval) to reach in the infinite population of athletes was calculated to be 384, as many individual and team athletes as possible were reached, and the data were collected from 748 athletes.

### Data Collection Tool

The data were collected using the Coaching Behavior Assessment Questionnaire (CBAQ) and the Competitive Aggressiveness and Anger Scale (CAAS). While the CBAQ was adapted to Turkish by Filiz and Demirhan in 2019 [17], the CAAS was adapted to Turkish by Gürbüz, Kural and Özbek in 2017 [16]. The CAAS has a two-dimension structure (1-6:Anger Dimension and 7-12: Aggressiveness Dimension), while CBAQ has a five-dimension structure (1-6:Encouragement-E, 7-11: General Encouragement-GE, 12-14: General Encouragement Instruction-GEI, 15-18: General Communication-GC, and 19-21:Mistake-Contingent Technical Instruction-MCTI). The scales were designed as 5-point Likert scales. Although the validity and reliability levels of the scales were measured in previous studies, necessary tests were performed in this study as well to determine the validity and reliability levels of the scales. Thus, expert opinions were sought from experts in sports sciences and educational sciences regarding the content and face validity of the scales. A confirmatory factor analysis (CFA) was completed for construct validity, and the Cronbach's alpha internal consistency coefficient ( $\alpha$ ) was calculated for reliability. The CFA diagrams of the scales are presented in Figure 1, and the goodness of fit indices are presented in Table 1.

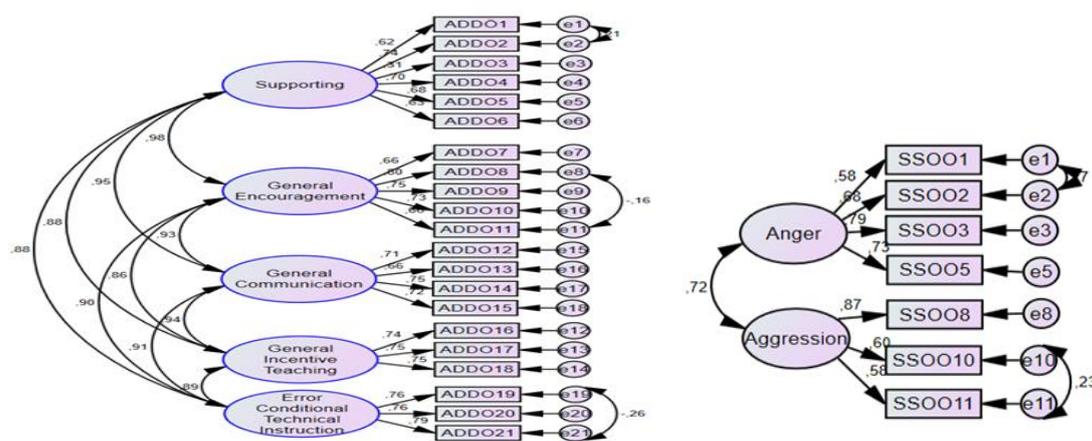


Figure 1. CFA Diagrams.

Table 1. This is a table. Tables should be placed in the main text near to the first time they are cited.

Fit Indices	Reference Range		Results		Evaluation	
	Good	Acceptable	CAAS	CBAQ	CAAS	CBAQ
CMIN/DF	$0 < \chi^2/sd \leq 3$	$3 < \chi^2/sd \leq 5$	3.600	4.815	Acceptable	Acceptable
RMSEA	$0 \leq RMSEA \leq .05$	$.05 \leq RMSEA \leq .08$	.059	.071	Acceptable	Acceptable
GFI	$.90 < GFI \leq 1$	$.85 < GFI \leq .90$	.985	.904	Good	Good
AGFI	$.90 < GFI \leq 1$	$.85 < GFI \leq .90$	.962	.874	Good	Acceptable
CFI	$.95 < CFI \leq 1$	$.90 < CFI \leq .94$	.984	.922	Good	Acceptable
RMR	$0 \leq RMR \leq .05$	$0.05 \leq SRMR \leq .10$	.039	.042	Good	Good
TLI	$.95 < TLI \leq 1$	$.90 < TLI \leq .94$	.970	.907	Good	Acceptable
DF			11	176		
CMIN			39.595	847.366		
Cronbach's Alfa- $\alpha$			.83	.95	Highly Reliable	

Harrington [20] stated that item factor loads should be above .30. Therefore, during the CFA process, items 4, 6, 7, 9, 12 in CAAS were excluded from the scale as their factor loads were lower

than .30. According to the CFA diagrams, the factor loads of the other items are greater than .30. Additionally, modifications were made between items 1-2 and 10-11 in the CBAQ and items 1-2, 8-11 and 19-21 in the CAAS. Finally, it was determined that the fit index values obtained in the CFA and presented in Table 1 were within the reference ranges. Furthermore, it was determined that a high level of reliability was achieved with CAAS-  $\alpha=.83$  and CBAQ- $\alpha=.95$ . These results indicate that the CAAS and CBAQ scales, which are the data collection tools used in the study, have high reliability.

### *Data Analysis*

This study aims to reveal the current situation in an unbiased manner. For this purpose, the researcher performed the data analysis process upon completion of data collection by using statistical methods. Statistical package programs were used in analyzing the data. The significance level (significance level) was accepted as  $p=0.05$ . During data analysis, the validity and reliability of the data collection tools were first tested. According to Büyüköztürk [21], the Cronbach's alpha value was calculated for the reliability of the measurement tool, and two semi-tests were applied to the measurement tool. A confirmatory factor analysis (CFA) was completed to determine the construct validity of the measurement tool. To evaluate whether the data is normally distributed, mean-mode-median, skewness-kurtosis values, Q-Q plots, box plot, histogram graphs, and Kolmogorov-Smirnov and Shapiro-Wilk normality tests can be used [22]. The Pearson correlation analysis was used to determine the level of correlation between scales. In this analysis,  $p\leq 0.05$  was accepted as the level of significance. "Although this value shows that there are significant differences between the groups, it may not be a definite value" [23]. Therefore, prior to determining the statistical methods to use in analyzing the data in this study, graphs, skewness-kurtosis values, and normality tests were evaluated.

For the data to be considered normally distributed, the skewness- kurtosis values should be between (-1) and (+1), and the p values of the Kolmogorov-Smirnov and Shapiro-Wilk normality tests should be greater than 0.05 ( $p > 0.05$ ). Likewise, Levene's test value ( $p > 0.05$ ) should be considered for homogeneity of variances (24). A Levene's test value greater than 0.05 indicates a homogenous distribution [22].

### **3. Results**

The skewness, kurtosis, mean, and standard deviation values of the scale and sub-dimensions of the Coaching Behavior Assessment Questionnaire and the Competitive Aggressiveness and Anger Scale" are presented in Table 2.

Correlation coefficients were calculated in the multiple regression analysis to determine whether there was a linear relationship between the predictive variables of the CBAQ (E, GE, GEI, GC, and MCTI) sub-dimensions and the predicted variables of the CAAS (AD, AGD) sub-dimensions. The results of the Pearson correlation analysis performed to determine the possible relationship between the sub-dimensions of both scales are presented in Table 3.

The results of the multiple regression analysis performed to answer the question 'Do the variables of trainer behaviors -E, GE, GEI, GC, and MCTI- together predict athletes' anger (AA) significantly?' are presented in Tables 4 and 5. Table 4 shows the results of the ANOVA performed to determine if the regression model of the relationship between the predictor variables and the predicted variable was significant.

The results of the multiple regression analysis completed to answer the question 'Do the E, GE, GEI, GC, and MCTI variables of coaching behavior significantly predict athletes' aggressiveness (AAG)?' are presented in Tables 6 and 7. Table 6 presents the results of the ANOVA completed to determine whether the regression model accounted for the relationship between the predictor and predicted variables.

**Table 2.** Skewness-Kurtosis, Mean, and Standard Deviation Values of the Scales/Dimensions.

Variables	n	$\bar{X}$	ss	Skewness	Kurtosis
CBAQ	748	3.99	0.73	-0.471	-0.907
CAAS	748	2.38	0.86	0.306	-0.331
CBAQ Encouragement dimension	748	4.02	0.88	-0.527	-0.689
CBAQ General Encouragement dimension	748	4.14	0.92	-0.883	0.197
CBAQ General Encouragement Instruction	748	4.11	0.91	-0.806	0.063
CBAQ General Communication dimension	748	4.07	0.92	-0.826	-0.137
CBAQ Mistake-Contingent Tech. Inst.	748	4.06	0.99	-0.886	0.083
CAAS Anger Dimension	748	2.09	0.87	0.797	0.485
CAAS Aggressiveness Dimension	748	2.38	1.03	0.070	-0.944

According to Table 2, the mean scores of the five sub-dimensions of the "Coaching Behavior Assessment Questionnaire" vary between 4.02-4.14, and the standard deviations vary between .88-.99, while the mean scores of the sub-dimensions of the "Aggressiveness and Anger in Sports Scale" are 2.09 and 2.68, and the standard deviations are .87 and 1.03. The decrease between the mean scores and the standard deviation in both scales indicates a homogeneous structure has formed and the data are close to the mean. When the skewness and kurtosis values in Table 2 are examined, it can be said that the values calculated for the sub-dimensions of both scales range from 3 to -3, indicating a normal distribution [25]. These findings show that there is no abnormality in the distribution of the data, meaning there is a normal distribution in the scores of the scales and their sub-dimensions used in the study. In other words, the E, GE, GEI, GC, and MCTI scores are assumed to be normally distributed in multiple regression.

**Table 3.** Correlation Analysis of the Mean Scores of CBAQ and CAAS.

Scales/Sub-Dimensions	1	1.a	1.b	1.c	1.d	1.e	2.	2.a	2.b
1.CBAQ	1								
1.a- E	0.894**	1							
1.b-GE	0.869**	.758**	1						
1.c-GET	0.814**	.712**	.674**	1					
1.d-GC	0.849**	.691**	.661**	.675**	1				
1.e-MCTI	0.827**	.670**	.701**	.637**	.696**	1			
2.CAAS	-	-.185**	-.262**	-.153**	-.227**	-.223**	1		
	0.255**								
2.a. AA	-	-	-	-	-.247**	-.224**	.887**	1	
	0.279**	0.223**	0.276**	0.185**					
2.b-AAG	-.191**	-.122**	-.205**	-.100**	-.172**	-.185**	.922**	.640**	1

Table 3 shows a negative relationship between the mean scores of the CBAQ and CAAS. As the correlation coefficient is  $-0.255^{**}$ , this is a weak but significant relationship. This indicates that as the CBAQ mean scores increase, the CAAS mean scores decrease. However, this is not a strong relationship. Based on the results presented in Table 3, there is a positive and moderate relationship between athlete's anger (AA) and (AAG) ( $r = .640$ ,  $p < .01$ ), a negative and weak relationship between AA and E ( $r = -.223$ ,  $p < .01$ ), a negative and weak relationship between AA and GE ( $r = -.276$ ,  $p < .01$ ), a negative and weak relationship between AA and GEI ( $r = -.185$ ,  $p < .01$ ), a negative and weak

relationship with CG ( $r = -.247, p < 0.01$ ), and a negative and weak relationship with MCTI ( $r = -.224, p < 0.01$ ). Similarly, the athlete's aggressiveness (AAG), which is another dimension of coaching behavior, has a negative and weak relationship with E ( $r = -.122, p < 0.01$ ), a negative and weak relationship with GE ( $r = -.205, p < 0.01$ ), a negative and weak relationship with GEI ( $r = -.100, p < 0.01$ ), a negative and weak relationship with GC ( $r = -.172, p < 0.01$ ), and a negative and weak relationship with MCTI ( $r = -.185, p < 0.01$ ). In terms of the correlations between the dimensions of the coaching behavior scale, there is a positive and strong relationship between E and GE ( $r = .758, p < 0.01$ ), a positive and strong relationship between E and GEI ( $r = .712, p < 0.01$ ), a positive and moderate relationship between E and GC ( $r = .691, p < 0.01$ ), and a positive and moderate relationship between E and MCTI ( $r = .670, p < 0.01$ ). It was also determined that there is a positive and moderate relationship between GE and GEI ( $r = .674, p < 0.01$ ), a positive and moderate relationship between GE and GC ( $r = .661, p < 0.01$ ), and a positive and strong relationship between GE and MCTI ( $r = .701, p < 0.01$ ). Additionally, there was a positive and moderate relationship between the GEI variable and GC ( $r = .675, p < 0.01$ ) and a positive and moderate relationship between GEI and MCTI ( $r = .637, p < 0.01$ ). Lastly, there is a positive and moderate relationship between GC and MCTI ( $r = .696, p < 0.01$ ).

**Table 4.** The results of the ANOVA regarding the prediction of the anger in sports dimension of the CBAA according to the CAAS dimensions of encouragement, general encouragement, general encouragement instruction, general communication, and mistake-contingent technical instruction.

Model	Sum of Squares	df	Mean Square	f	p
Regression	48.390	5	9.678		
Residual	518.160	742	0.698	13.859	.000 <sup>a</sup>
Total	566.550	747			

a. Predictor variables: The E, GE, GEI, GC, and MCTI dimensions of CBAQ. b. Predicted variables: AA dimension of CAAS.

According to the ANOVA results presented in Table 4, the multiple regression model for predicting the athlete's anger dimension of the CAAS according to the encouragement, general encouragement, general encouragement instruction, general communication, and mistake-contingent technical instruction dimensions of the CBAQ is statistically significant ( $F(5, 742) = 13.859$ ).

**Table 5.** Multiple regression analysis results to predict the anger dimension of the CAAS according to the encouragement, general encouragement instruction, general communication, and mistake-contingent technical instruction dimensions of the CBAQ.

Variable	B	Standard Error <sub>B</sub>	Standardized ( $\beta$ )	t	p
Fixed	3.264	.159	-	20.486	.000
E dimension	.005	.061	.005	.075	.940
GE dimension	-.207	.057	-.220	-3.663	.000
GEI dimension	.060	.053	.063	1.145	.253
GC dimension	-.125	.053	-.133	-2.365	.018
MCTI dimension	-.018	.049	-.020	-.365	.715
R = 0.292, R <sup>2</sup> = 0.085					
F (5, 742) = 13.859, p = .000					

Based on the results presented in Table 5, the variables E, GE, GEI, GC, and MCTI together show a weak but significant relationship with the athletes' anger (AA) dimension in terms of trainer behaviors ( $R = 0.292, R^2 = 0.085, p < .01$ ). The five variables together explain approximately 9% of the

total variance in athletes' anger (AA). According to the standardized regression coefficient ( $\beta$ ), the relative significance of the predictor variables on job satisfaction is GE, GC, GEI, MCTI, and E, respectively. When the t-test results regarding the significance of the regression coefficients are examined, it is found that only the "General Encouragement (GE) variable is a significant predictor of athletes' anger ( $t(747)=3.66, p<.01$ ). The E, GE, GEI, GC, and MCTI do not have any significant effect. The regression equation for the prediction of athletes' anger according to the results of the regression analysis is given below.

$$\text{Athlete's Anger (AA)} = [3.264 + 0.005 \text{ Encouragement (E)} + 0.060 \text{ General Encouragement Instruction (GEI)}] - [0.207 \text{ General Encouragement (GE)} + 0.125 \text{ General Communication (GC)} + 0.018 \text{ Mistake-Contingent Technical Instruction (MCTI)}]$$

**Table 6.** ANOVA results for predicting the athlete's aggressiveness (AAG) dimension of CAAS according to the CBAQ dimensions of encouragement, general encouragement, general encouragement instruction, general communication, and mistake-contingent technical instruction.

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	46.115	5	9.223	9.010	.000a
Residual	759.537	742	1.024		
Total	805.652	747			

a. Predictor variables: The E, GE, GEI, GC, and MCTI dimensions of CBAQ

b. Predicted variables: Athlete's anger dimension of CAAS

According to the ANOVA results presented in Table 6, the multiple regression model for the prediction of AAG according to E, GE, GEI, GC, and MCTI is statistically significant ( $F(5, 742) = 9.010$ ).

**Table 7.** Multiple regression analysis results for the prediction of athletes' aggressiveness dimension of CAAS according to the encouragement, general encouragement, general encouragement instruction, general communication, and mistake-contingent technical instruction dimensions of CBAQ.

Variable	B	Standard Error <sub>B</sub>	Standardized ( $\beta$ )	t	p
Fixed	3.593	.193	-	18.626	.000
E dimension	.127	.074	.108	1.723	.085
GE dimension	-.247	.069	-.220	-3.607	.000
GEI dimension	.118	.064	.104	1.846	.065
GC dimension	-.116	.064	-.103	-1.807	.071
MCTI dimension	-.101	.059	-.097	-1.717	.086

R = 0.239      R<sup>2</sup> = 0.057  
F (5, 742) = 9.010      p = .000

According to the results shown in Table 7, the variables E, GE, GEI, GC, and MCTI together show a low and significant relationship with athletes' aggressiveness (AAG) ( $R = 0.239, R^2 = 0.057, p < .01$ ). These five variables together explain approximately 6% of the total variance in athletes' aggressiveness (AAG). The relative order of significance of the predictor variables on job satisfaction according to the standardized regression coefficient ( $\beta$ ) is GE, E, GEI, GC, and MCTI, respectively. The t-test results regarding the significance of the regression coefficients indicate that only the general

encouragement (GE) variable is a significant predictor of athletes' aggressiveness (SD)  $t(747)=3.61$ ,  $p<.01$ . On the other hand, it is seen that E, GEI, GC, and MCTI do not have a significant effect on athletes' aggressiveness (AAG). The regression equation for the prediction of athletes' aggressiveness (AAG) based on the results of the regression analysis is given below.

$$\text{Athlete's Aggressiveness (AAG)} = [3.593 + 0.127 \text{ Encouragement (E)} + 0.118 \text{ General Encouragement Instruction (GEI)}] - [0.247 \text{ General Encouragement (GE)} + 0.116 \text{ General Communication (GC)} + 0.101 \text{ Mistake-Contingent Technical Instruction (MCTI)}]$$

\* According to these results, the hypothesis that only GE is a significant predictor of AA and AAG (H2) in the established model can be accepted. The other hypotheses that E is a significant predictor of AA and AAG (H1), that GEI is a significant predictor of AA and AAG (H3), that GC is a significant predictor of AA and AAG (H4), and that MCTI is a significant predictor of AA and AAG (H5) are refuted.

#### 4. Discussion

In this study, the CBAQ and CAAS scales were used to examine the effects of trainer behaviors on the anger and aggressiveness levels of athletes. The skewness, kurtosis, mean, and standard deviation values shown in Table 2 reflect the distribution characteristics of the scales. The CBAQ scale generally reflects moderate encouragement behaviors with a mean value of 3.99, while the CAAS scale reflects a low level of aggressiveness and anger with a mean value of 2.38. The correlations between the CBAQ and CAAS scales are shown in Table 3. The results of the correlation analysis show that there are relationships at various levels between the CBAQ dimensions and the CAAS dimensions. For example, while there was a negative relationship between the encouragement dimension of the CBAQ and the aggressiveness dimension of the CAAS, a positive correlation was found between the general encouragement and the anger dimensions. These results show that trainer behaviors are effective in influencing the emotional reactions of athletes and that different dimensions are associated in different ways.

The ANOVA results presented in Tables 4 and 6 evaluate the ability of the CBAQ dimensions to predict the CAAS dimensions. Both tables show that the predictive variables (CBAQ dimensions) have a significant effect on the CAAS dimensions. For example, Table 4 shows the ability of the CBAQ dimensions to predict the anger dimension of CAAS, while Table 6 shows the ability of the CBAQ dimensions to predict the aggressiveness sub-dimension of the CAAS. These results show that the trainer behaviors affect the anger and aggression levels of the athletes.

The results of the multiple regression analysis presented in Tables 5 and 7 examine in more detail the ability of the CBAQ dimensions to predict the CAAS dimensions. Both tables reveal that the encouragement and general encouragement dimensions significantly predict the CAAS dimensions. These results show that trainers can affect anger and aggression levels by encouraging athletes and displaying positive encouragement behaviors.

Trainers have a great influence on athletes. Their guidance and leadership skills can directly affect the performance of athletes. Factors such as providing motivation, developing technical skills, and creating team unity are just some of the areas where trainers are effective. Moreover, the behaviors and attitudes of trainers can affect the morale, motivation, and general psychological state of the athletes. Therefore, the subjective influence of trainers on athletes can significantly affect their success and performance (26). A study by Moiratidou (27), on the other hand, found the moral competence of individual athletes to be higher than that of team athletes. These results show that individual athletes attach more importance to moral values and have a higher level of moral competence. A study by Karayilmaz (28) examined the psychosocial factors affecting the aggression tendencies of amateur football players. While the results of the study showed that various factors affect the aggressiveness levels of football players, Tutkun et al. (29) concluded that the passive

aggressiveness scores of athletes in individual sports are statistically significantly higher than those who engage in team sports.

This study was conducted to investigate the effects of trainer behaviors on the anger and aggressiveness levels of athletes. It aimed to understand the effects of trainer behaviors on these psychological factors by calculating the skewness, kurtosis, mean, and standard deviation of the scale/dimensions (Table 2).

The results of the correlation analysis revealed relationships between trainer behaviors and levels of anger and aggression. A certain level of correlation was observed between the dimensions of the CBAQ (Coaching Behavior Assessment Questionnaire) and the CAAS (Competitive Aggressiveness and Anger Scale) (Table 3). These findings show that trainer behaviors can influence the anger and aggressiveness levels of athletes.

Multiple regression analysis results reveal the role of trainer behaviors in predicting the anger and aggression levels of athletes. In the analyses performed based on the dimensions of the CBAQ, it was determined that certain dimensions affected the anger and aggressiveness levels of the athletes (Table 5). These results show that the positive and supportive behaviors of trainers can play an important role in reducing the anger and aggression levels of athletes.

The results of the ANOVA analysis explain in more detail the effects of trainer behaviors on directing the anger and aggression levels of athletes. In the analyses that were done based on the CAAS dimensions (Table 4), there were differences in how well certain dimensions could predict the CBAQ dimensions. These results show that certain behaviors of trainers can determine and direct the anger and aggression levels of athletes.

The results of this study highlight the impact of trainers on the anger and aggression levels of athletes. It is important to emphasize strategies for coping with anger and aggression in the training and development of trainers. Positive, supportive, and communicative trainer behaviors can increase the emotional well-being of athletes and positively affect their sporting performance.

## 5. Conclusions

In conclusion, the findings of this study can help trainers understand the emotional needs of athletes and provide support for them. At the same time, a positive sports environment can be created by protecting the emotional well-being of the athletes, and their performance and personal development can be promoted. Sports clubs and federations should support the training and development of trainers. Training programs should aim to strengthen coaches' emotional management skills, communication skills, and leadership abilities.

The following recommendations were made based on the results of this study:

- 1- Training programs for trainers should aim to improve their emotional intelligence and communication skills. Trainers should be trained in emotional management strategies and stress coping techniques and transfer these skills to athletes.
- 2- Trainers should set an example by supporting athletes and creating an environment of trust. Focusing on the personal development of athletes, they should consider individual differences and provide them with appropriate support.
- 3- Trainers should actively communicate with athletes and try to understand their emotional needs. They should show empathy and provide open communication channels to protect athletes' emotional well-being and increase their motivation.
- 4- Sports clubs and federations should support the training and development of trainers. Training programs should aim to strengthen the leadership skills, communication skills, and psychological counseling competencies of trainers.
- 5- Trainers should emphasize sport's ethical values and support the spirit of fair play.

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## References

1. Sagar, S.S.; Jowett, S. Communicative acts in coach–athlete interactions: When losing competitions and when making mistakes in training. *Western Journal of Communication* **2012**, *76*, 148-174.
2. Jaakkola, T.; Ntoumanis, N.; Liukkonen, J. Motivational climate, goal orientation, perceived sport ability, and enjoyment within. *Scand J Med Sci Sports* **2016**, *26*, 109-115.
3. Avcı, K.S.; Çepikkurt, F.; Kale, E.K. Examination of the relationship between coach-athlete communication levels and perceived motivational climate for volleyball players. *Universal Journal of Educational Research* **2018**, *6*, 346-353.
4. Mallett, C.J. Modelling the Complexity of the coaching process: A commentary. *International Journal of Sports Science and Coaching* **2007**, *2*, 407-409.
5. Jowett, S.; Poczwadowski, A. Understanding the coach-athlete relationship. In *Social Psychology in Sport*, 1<sup>st</sup> ed.; Jowett, S, Lavallee, D, Champaign: Human Kinetics, 2007; pp. 3–14.
6. Albrecht, R. Positive Coaching, Motivation and Communication. Research Study For The Study of Young Sports. Michigan State University 2003; <https://slideplayer.com/slide/5177545/>
7. Danilewicz, C. Violence in Youth Sport: Potential Preventative Measures and Solutions. UNLV Theses, Dissertations, Professional Papers, and Capstones, University of Nevada, Las Vegas, 2012. <http://dx.doi.org/10.34917/3249654>
8. Kavussanu, M.; Stanger, N.; Boardley, I.D. The Prosocial and Antisocial Behaviour in Sport Scale: Further evidence for construct validity and reliability. *Journal of Sports Sciences* **2013**, *31*, 1208–1221. <http://dx.doi.org/10.1080/02640414.2013.775473>
9. Maxwell, J. Anger rumination: an antecedent of athlete aggression? *Psychologist. Sports Exercise* **2004**, *5*, 279–289.
10. İközler, C.; Karagözoğlu, C. *Psychology of Success in Sports* (In Turkish: Sporda Başarının Psikolojisi). 3<sup>rd</sup> ed.; Alfa Basım Yayın Dağıtım, İstanbul, 1997.
11. Fields, S.; Collins, C.L.; Comstock, R.D. Violence in youth sports: Hazing, brawling and foul play. *British Journal of Sports Medicine* **2010**, *44*, 32–37.
12. Gönen, M. The Effect of Coach-Athlete Relationship on Athletes' State Anxiety, Anger and Subjective Well-Being Levels: Taekwondo and Protective Football Example. Doctoral Thesis, T.C. Gazi University Institute of Health Sciences, Ankara, 2019.
13. Sevim, Y. *Training Science* (In Turkish; Antrenman Bilgisi). Nobel Yayın Dağıtım, Ankara, 2002.
14. Dosil J. *The Sport Psychologist's Handbook: A Guide for Sport-Specific Performance Enhancement*, John Wiley Press, San Francisco, 2005; 24.
15. Karasar, N. *Scientific Research Method* (In Turkish: Bilimsel Araştırma Yöntemi). Nobel, Ankara, 2012.
16. Filiz, B.; Demirhan, G. Adaptation of the coaching behavior assessment questionnaire into the Turkish culture. *Spormetre*, **2017**, *15*, 1-10. [https://doi.org/10.1501/Sporm\\_0000000302](https://doi.org/10.1501/Sporm_0000000302)
17. Gürbüz, B.; Kural, S.; Özbek, O. Competitive aggressiveness and anger scale: validity and reliability study. *Sportif Bakış: Spor ve Eğitim Bilimleri Dergisi*, **2019**, *6*, 206-217. <https://doi.org/10.33468/sbsebd.94>.
18. Hooper, D.; Coughan, J.; Mullen, M.R. Structural equation modelling: guidelines for determining model fit. *Electronic Journal of Business Research Methods*, **2008**, *6*, 53-60. <https://faq.whatsapp.com/tr/android/26000092/?category=5245246>.
19. Korucuk, M. A distance education attitude scale: A validity and reliability study. *Millî Eğitim Dergisi*, **2023**, *52*, 1133-1156. <https://doi.org/10.37669/milliegitim.1109796>
20. Harrington, D. *Confirmatory factor analysis*. Oxford University Press. 2009, <https://doi.org/10.1093/acprof:oso/9780195339888.001.0001>.
21. Büyüköztürk, Ş. *Manual of data analysis for social sciences* (In Turkish: Sosyal Bilimler için Veri Analizi El Kitabı). Pegem Akademi Yayınları, Ankara, 2010.

22. Korucuk, N. Consumer purchasing behavior on green products in the context of green marketing. Master Thesis, Kafkas University, Institute of social sciences, Department of business of administration. 2019.
23. Hung, H.M.J.; O'neil, R.T.; Bauer, P.; Kohne, K. The behavior of the p-value when alternative hypothesis is true?. *Biometrics*, **1997**, 53, 11-22.
24. Pallant, J. SPSS Survival Manual, Anı Yayıncılık, Ankara, 2017.
25. Tabachnick, B.G.; Fidell, L.S. Using Multivariate Statistics (6th ed.), Allyn and Bacon, Boston, 2013.
26. Kalkan, T.; Sarı, İ. Coaching behaviors: theoretical approaches, coaches' effect on athletes and recommendations. *Review Article Journal of Exercise and Sport Sciences Research* **2021**, 1, 38-49.
27. Moiratidou, K. Determinants of athletes' moral competence: The role of demographic characteristics and sport-related perceptions. *Sport in Society* 2017, 20, 802-815.
28. Karayılmaz, A. Psychological and Social Reasons That Make The Amateur Players of Show Agressive Behaviours (Zonguldak Super Amateur League Sample). Master Thesis. Sakarya University Insitute of Social Sciences, Sakarya, 2006.
29. Tutkun, E.; Güner, B.Ç.; Ağaoğlu, S.A.; Soslu, R. Evaluation of aggression levels of individuals participating in team and individual sports. *Spor ve Performans Araştırmaları Dergisi*, **2010**, 1, 23-29.

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