

Investigation of the Relationship Between Social Physique Anxiety and Aggressive Tendencies in Team and Individual Athletes

Takım ve Bireysel Sporcularda Sosyal Fizik Kaygısı ile Saldırganlık Eğilimleri Arasındaki İlişkinin İncelenmesi

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Öz

Bu araştırmanın amacı, takım ve bireysel sporcularda sosyal fizik kaygısı ile saldırganlık eğilimleri arasındaki ilişkileri incelemek ve spor türünün Olumsuz Değerlendirilme Beklentisi (ODB) ile saldırganlık eğilimleri arasındaki ilişkilerde düzenleyici rolünü belirlemektir. Kesitsel ve ilişkisel desende gerçekleştirilen araştırmaya 159 kadın ve 236 erkek olmak üzere toplam 395 sporcu katılmıştır; katılımcıların 282'si takım, 113'ü bireysel sporlarla ilgilenmektedir. Verilerin toplanmasında Kişisel Bilgi Formu, Sosyal Fizik Kaygı Envanteri ve Saldırganlık Envanteri kullanılmıştır. Verilerin analizinde tanımlayıcı istatistikler, Pearson korelasyon analizi, bağımsız örneklem için t-testi, çoklu doğrusal regresyon ve düzenleyici etki analizleri uygulanmıştır. Bireysel sporcuların Sosyal Fizik Kaygısı toplam ve Olumsuz Değerlendirilme Beklentisi puanları takım sporcularından daha yüksek bulunmuş ve her iki farklılık da çoklu karşılaştırmalar için yapılan Holm düzeltmesinden sonra istatistiksel olarak anlamlılığını korumuştur. Takım ve bireysel sporcular arasında Yıkıcı Saldırganlık, Atılacak ve Edilgen Saldırganlık açısından istatistiksel olarak anlamlı farklılık belirlenmemiştir. Düzeltilmemiş analizlerde Olumsuz Değerlendirilme Beklentisi, Yıkıcı Saldırganlık ($r = -0.158, p = 0.002$) ve Edilgen Saldırganlık ($r = -0.135, p = 0.007$) ile düşük düzeyde negatif ilişkili bulunmuştur. Ancak Holm düzeltmesinden sonra yalnızca Olumsuz Değerlendirilme Beklentisi ile Yıkıcı Saldırganlık arasındaki ilişki anlamlılığını korumuş (düzeltilmiş $p = 0.015$), Edilgen Saldırganlık ile ilişki ise anlamlılığını korumamıştır (düzeltilmiş $p = 0.052$). Çoklu regresyon analizleri, spor türü kontrol edildikten sonra Olumsuz Değerlendirilme Beklentisinin hem Yıkıcı hem de Edilgen Saldırganlık ile negatif yönde ilişkili olmaya devam ettiğini, ancak modellerin varyansın yalnızca %2.0–2.8'ini açıkladığını göstermiştir. Düzenleyici etki analizleri, spor türünün Olumsuz Değerlendirilme Beklentisi ile her iki saldırganlık boyutu arasındaki ilişkileri anlamlı biçimde değiştirdiğine ilişkin istatistiksel kanıt sağlamamıştır. Genel olarak bireysel sporcuların sosyal fizik kaygısı düzeyleri takım sporcularından daha yüksek olmakla birlikte saldırganlık eğilimleri spor türüne göre anlamlı biçimde farklılaşmamıştır. Sosyal fizik kaygısı ile saldırganlık arasındaki ilişkiler düşük düzeyde ve boyuta özgü olup incelenen Olumsuz Değerlendirilme Beklentisi-saldırganlık ilişkileri spor türü tarafından anlamlı biçimde düzenlenmemiştir.

Anahtar Kelimeler: Sosyal fizik kaygısı, saldırganlık, olumsuz değerlendirilme beklentisi, takım sporları, bireysel sporlar.

Abstract

This study aimed to examine the relationships between social physique anxiety and aggression tendencies among team and individual athletes and to determine whether sport type moderated the associations between Expectations of Negative Evaluation (ENE) and aggression tendencies. The study employed a cross-sectional correlational design and included 395 athletes, comprising 159 women and 236 men; 282 participated in team sports and 113 in individual sports. Data were collected using a Personal Information Form, the Social Physique Anxiety Scale, and the Aggression Inventory. Descriptive statistics, Pearson correlation analysis, independent-samples t tests, multiple linear regression analyses, and moderation analyses were performed. Individual athletes had higher Total Social Physique Anxiety and ENE scores than team athletes, and both differences remained statistically significant after Holm adjustment for multiple testing. No statistically significant differences were observed between team and individual athletes in Destructive Aggression, Assertiveness, or Passive Aggression. At the unadjusted level, ENE was weakly and negatively correlated with Destructive Aggression ($r = -0.158, p = 0.002$) and Passive Aggression ($r = -0.135, p = 0.007$). After Holm adjustment, however, only the association between ENE and Destructive Aggression remained statistically significant (adjusted $p = 0.015$), whereas the association with Passive Aggression did not (adjusted $p = 0.052$). Multiple regression analyses indicated that ENE remained negatively associated with both Destructive and Passive Aggression after accounting for sport type, although the models explained only 2.0–2.8% of the variance. Moderation analyses provided no statistically significant evidence that sport type moderated the associations between ENE and either aggression dimension. Overall, individual athletes exhibited higher social physique anxiety than team athletes, whereas aggression tendencies did not differ significantly by sport type. The associations between social physique anxiety and aggression were small and dimension-specific, and the examined ENE-aggression associations were not significantly moderated by sport type.

Keywords: Social physique anxiety, aggression, expectations of negative evaluation, team sports, individual sports

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INTRODUCTION

Sport environments combine physical performance with social evaluation, as athletes' bodies and physical characteristics may be visible to teammates, opponents, coaches, and others. Consequently, concerns about how one's physical appearance is perceived and evaluated may represent an important psychological experience in sport. Social physique anxiety (SPA) refers to the anxiety individuals experience when they perceive that their physical appearance is being observed or evaluated by others (Hart et al., 1989). Research has shown that SPA is relevant to a range of psychological, behavioral, and physical experiences in sport and physical activity settings (Sabiston et al., 2014). The experience of SPA may vary according to the characteristics of sport participation. Team and individual sports differ in performance responsibility, patterns of social interaction, and evaluative conditions, which may shape athletes' experiences of bodily visibility and social evaluation. Previous research suggests that SPA may differ according to sport context, competitive level, and the nature of sport participation (Gay et al., 2011; Haase, 2009; Mülazımoğlu-Ballı et al., 2010; Van Raalte et al., 1998). In particular, Haase (2009) reported higher SPA among female athletes participating in individual sports than among those participating in team sports, while research on aesthetic and competitive sport contexts has further indicated that the evaluative characteristics of the sporting environment may be relevant to athletes' physique-related anxiety (Gay et al., 2011; Van Raalte et al., 1998). These findings suggest that sport type may provide a meaningful context for examining differences in SPA, although such differences cannot be attributed to the team–individual distinction alone.

Aggression is another multidimensional psychological and behavioral construct relevant to sport. Its expression may vary according to factors such as sporting context, competitive level, gender, and sport characteristics (Coulomb-Cabagno & Rasclé, 2006). Studies comparing athletes across different sport categories have produced inconsistent findings, with some reporting differences in aggression between team and individual athletes and others finding limited or no differences across sport-related groups (Basiaga-Pasternak et al., 2020; Khan et al., 2017; Taily & Bhat, 2023; Tutkun et al., 2010). This variability indicates that aggression should not be understood solely in terms of sport type and supports examining its different dimensions separately. SPA and aggression may also be considered together because both involve responses to interpersonal and evaluative aspects of the sport environment. SPA reflects concern about how one's physical appearance is judged by others, particularly through expectations of negative evaluation (Hart et al., 1989; Sabiston et al., 2014). Such concerns may be associated with behavioral responses to socially evaluative situations; however, these responses need not take the form of overt aggression. Previous research has linked SPA to avoidance, motivational processes, and protective self-presentational behaviors (Brewer et al., 2004; Cox et al., 2011). Therefore, examining SPA in relation to destructive aggression, passive aggression, and assertiveness may help clarify whether physique-related evaluative concerns are associated differently with distinct behavioral tendencies. Importantly, given the correlational nature of these constructs, any such relationships should be interpreted as associations rather than causal effects. Despite substantial research examining SPA and aggression separately in sport contexts, the

literature reviewed for the present study indicates that evidence directly addressing their relationship in athlete samples remains limited. In particular, it remains unclear whether the dimensions of SPA—Physical Appearance Comfort (PAC) and Expectations of Negative Evaluation (ENE)—are differentially associated with destructive aggression, passive aggression, and assertiveness, and whether these associations vary between team and individual athletes. Addressing this gap may provide a more integrated understanding of how physique-related social evaluation and aggression tendencies coexist across different sport contexts. Accordingly, the primary aim of the present study was to examine the relationships between SPA and aggression tendencies among team and individual athletes. Specifically, the study examined (a) whether SPA and aggression dimensions differed between team and individual athletes; (b) whether PAC and ENE were associated with destructive aggression, assertiveness, and passive aggression; (c) whether ENE remained statistically associated with destructive and passive aggression after accounting for sport type; and (d) whether sport type moderated these associations.

MATERIAL and METHOD

Research Design

This study was conducted within a quantitative research approach to examine the relationships between social physique anxiety and aggression tendencies among team and individual athletes. A cross-sectional correlational research design was employed. The primary variables of the study were social physique anxiety and aggression tendencies, while sport type was categorized as team sport or individual sport. The relationships between athletes' social physique anxiety and their destructive aggression, assertiveness, and passive aggression tendencies were examined. In addition, the relationships between the Physical Appearance Comfort and Expectations of Negative Evaluation dimensions of social physique anxiety and aggression tendencies were evaluated, and differences in social physique anxiety and aggression scores between team and individual athletes were investigated. The statistical association of Expectations of Negative Evaluation with destructive and passive aggression, as well as the moderating role of sport type in these relationships, was also examined.

Study Group

The study group consisted of 395 university student-athletes who participated in competitions organized by the Turkish University Sports Federation. Participants were recruited using a convenience sampling approach through face-to-face contact during these sporting events and through an online survey. Data were collected between January and April 2026. To be eligible for the study, participants were required to be university students, be at least 18 years of age, and participate as athletes in competitions organized by the Turkish University Sports Federation. Participants were excluded if they were younger than 18 years, were not university students, did not meet the athlete participation criterion, or submitted incomplete questionnaires. Of the 395 athletes included in the final sample, 159 (40.3%) were female and 236 (59.7%) were male. The mean age of the participants was 21.62 ± 2.64 years. Regarding academic affiliation, 265 participants (67.1%) were enrolled in a Faculty of Sport Sciences, while 130 (32.9%) were

enrolled in other faculties. According to sport type, 282 participants (71.4%) were team-sport athletes and 113 (28.6%) were individual-sport athletes. The team-sport category included football, basketball, and volleyball, whereas the individual-sport category included boxing, athletics, and tennis. No a priori power analysis was conducted before data collection. The final sample size was determined by the number of eligible university athletes who could be reached during the data-collection period and who provided complete responses. Accordingly, the analyses were conducted using the final sample of 395 participants. The absence of an a priori power calculation should be considered when interpreting the findings, particularly small effects and interaction effects.

Table 1. Frequency and Percentage Distributions of Participants' Demographic Characteristics

Variable	Category	<i>n</i>	%
Gender	Women	159	40.3
	Men	236	59.7
Age	18–19 years	110	27.8
	20–21 years	189	47.8
	22–23 years	83	21.0
	24 years and older	13	3.3
Faculty	Faculty of Sport Sciences	265	67.1
	Other	130	32.9
Sport Type	Team sport	282	71.4
	Individual sport	113	28.6
Total		395	100.0

Data Collection Instruments

A Personal Information Form, the Social Physique Anxiety Scale, and the Aggression Inventory were used as data collection instruments in the study.

Personal Information Form

The Personal Information Form was used to obtain information regarding the participants' gender, age, faculty, and type of sport. Sport type was classified into two categories: team sports and individual sports.

Social Physique Anxiety Scale

The Social Physique Anxiety Scale was developed by Hart et al. (1989) to assess anxiety arising from the evaluation of an individual's physical appearance by others. The scale consists of 12 items. The validity and reliability study of the Turkish version was conducted by Mülazımoğlu Ballı and Aşçı (2006). The Turkish version comprises two subscales: Physical Appearance Comfort (PAC) and Expectations of Negative Evaluation (ENE). The PAC subscale consists of five items, whereas the ENE subscale consists of seven items. Items are rated on a five-point Likert-type scale. In the Turkish adaptation study conducted by Mülazımoğlu Ballı and Aşçı (2006), the two-factor structure of the scale was reported to explain 44.86% of the total variance. Cronbach's alpha internal consistency coefficients were 0.77 for PAC, 0.69 for ENE, and 0.81 for the total scale among female participants; the corresponding coefficients among male participants were 0.75, 0.68, and 0.77, respectively. In the present study, Cronbach's alpha internal consistency coefficients were 0.451 for PAC, 0.755 for ENE, and 0.683 for the total Social

Physique Anxiety score. Accordingly, the internal consistency of the ENE subscale was considered acceptable, whereas the PAC subscale demonstrated low internal consistency. Despite its low internal consistency in the present sample, the PAC subscale was retained in the analyses to preserve the established two-dimensional structure of the Turkish version of the scale and to allow transparent reporting of the measurement results; however, findings involving PAC were not treated as robust evidence and were interpreted cautiously.

Aggression Inventory

The Aggression Inventory, developed by Kiper (1984), was used to assess athletes' aggression tendencies. The inventory consists of 30 items and three subscales: Destructive Aggression, Assertiveness, and Passive Aggression, with 10 items in each subscale. Scores obtained from the subscales are evaluated separately, with higher scores indicating higher levels of the corresponding tendency. In the present study, Cronbach's alpha internal consistency coefficients were 0.851 for Destructive Aggression, 0.849 for Assertiveness, and 0.815 for Passive Aggression. These coefficients indicate that all three subscales of the Aggression Inventory demonstrated high internal consistency in the present sample.

Data Analysis

The suitability of the dataset for statistical analysis was first examined. Descriptive statistics, including the arithmetic mean, standard deviation, minimum and maximum values, skewness, and kurtosis coefficients, were calculated. Distributional characteristics were evaluated by examining the skewness and kurtosis values of the variables, and parametric analyses were subsequently employed. Cronbach's alpha coefficients were calculated to assess the internal consistency of the measurement instruments in the present sample. Pearson correlation analysis was used to examine the linear relationships between social physique anxiety and aggression tendencies. Independent-samples t tests were conducted to compare social physique anxiety and aggression scores between team and individual athletes. Homogeneity of variance was evaluated using Levene's test, and Welch's t test results were considered when the homogeneity of variance assumption was not met. Cohen's d was calculated to evaluate the magnitude of between-group differences. Multiple linear regression analyses were conducted to determine whether ENE remained statistically associated with Destructive and Passive Aggression after accounting for sport type. ENE and sport type were included as independent variables in the regression models, whereas Destructive and Passive Aggression were treated as dependent variables in separate models. For the moderation analyses, Expectations of Negative Evaluation scores were mean-centered, sport type was dummy-coded as team sport = 0 and individual sport = 1, and the Expectations of Negative Evaluation $\times$ Sport Type interaction term was entered into the regression model. The statistical significance of the interaction term was used to evaluate the moderating effect. The assumptions underlying the regression and moderation analyses were examined using residual diagnostics and model diagnostic statistics. Linearity and model specification were evaluated using residual-based diagnostics,

homoscedasticity was assessed using the Breusch–Pagan test, and the distribution of residuals was examined for substantial departures from normality. Multicollinearity was evaluated using variance inflation factors (VIFs), and potentially influential observations were examined using studentized residuals and Cook's distance. The diagnostic results indicated no substantial violations of the assumptions that would preclude interpretation of the fitted models. The significance level was set at $p < 0.05$ for all statistical analyses. Given the number of statistical comparisons, the potential inflation of Type I error was additionally examined using Holm-adjusted p values within conceptually related families of tests. Holm adjustments were applied separately to the six between-group comparisons and to the nine correlations between the three social physique anxiety indicators and the three aggression dimensions. The original p values are reported in the tables, while the Holm-adjusted results were used as a sensitivity analysis to evaluate the robustness of statistically significant findings.

Validity, Reliability, and Ethics

The validity and reliability characteristics of the measurement instruments used in the study were evaluated primarily on the basis of their original development and adaptation studies. The Social Physique Anxiety Scale was developed by Hart et al. (1989), and the validity and reliability study of its Turkish version was conducted by Mülazımoğlu Ballı and Aşçı (2006). The Turkish adaptation study reported a two-factor structure consisting of Physical Appearance Comfort and Expectations of Negative Evaluation. In the present study, the internal consistency of the measurement instruments was assessed using Cronbach's alpha coefficients.

Table 2. Internal Consistency Coefficients of the Measurement Instruments Used in the Study

Measurement Instrument / Subscale	Number of Items	Cronbach's α
Social Physique Anxiety Scale	12	0.683
Physical Appearance Comfort (PAC)	5	0.451
Expectations of Negative Evaluation (ENE)	7	0.755
Aggression Inventory	30	—
Destructive Aggression	10	0.851
Assertiveness	10	0.849
Passive Aggression	10	0.815

As shown in Table 2, Cronbach's alpha was 0.683 for the total Social Physique Anxiety Scale and 0.755 for the Expectations of Negative Evaluation subscale. The coefficient for the Physical Appearance Comfort subscale was 0.451. Because this value indicates low internal consistency in the present sample, findings related to Physical Appearance Comfort were interpreted with caution. Cronbach's alpha coefficients for the Aggression Inventory subscales were 0.851 for Destructive Aggression, 0.849 for Assertiveness, and 0.815 for Passive Aggression, indicating adequate internal consistency for the aggression subscales in the present sample. Throughout the research process, the principles of voluntary participation, confidentiality of data, and scientific research ethics were observed. The study was conducted following ethical approval

granted by the Kafkas University Faculty of Health Sciences Non-Interventional Research Ethics Committee on June 30, 2025 (Approval No. 81829502.903.44).

FINDINGS

Descriptive statistics for the social physique anxiety and aggression variables were examined first. The mean, standard deviation, minimum and maximum values, skewness, and kurtosis coefficients for the study variables are presented in Table 3.

Table 3. Descriptive Statistics for the Study Variables

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	Min	Max	Skewness	Kurtosis
Physical Appearance Comfort	395	10.03	3.73	5	23	0.950	1.054
Expectations of Negative Evaluation	395	19.05	7.06	7	35	0.279	-0.788
Total Social Physique Anxiety	395	29.08	8.42	12	58	0.321	-0.486
Destructive Aggression	395	28.83	13.08	1	61	0.050	-0.601
Assertiveness	395	38.26	12.33	1	61	-0.447	-0.280
Passive Aggression	395	27.85	12.06	1	61	0.015	-0.053

Relationships Between Social Physique Anxiety and Aggression Tendencies

Pearson correlation analysis was conducted to examine the relationships between social physique anxiety and aggression tendencies. The results are presented in Table 4.

Table 4. Pearson Correlation Coefficients Between Social Physique Anxiety and Aggression Variables

Variable	1	2	3	4	5	6
1. Physical Appearance Comfort	1					
2. Expectations of Negative Evaluation	0.136**	1				
3. Total Social Physique Anxiety	0.557**	0.898**	1			
4. Destructive Aggression	-0.030	-0.158**	-0.146**	1		
5. Assertiveness	0.026	-0.013	0.001	0.395**	1	
6. Passive Aggression	-0.019	-0.135**	-0.121*	0.743**	0.321**	1

Note. Asterisks indicate statistical significance based on unadjusted p values. Holm-adjusted results are reported in the text. *N* = 395. **p* < 0.05. ***p* < 0.01.

After Holm adjustment for the nine correlations between social physique anxiety indicators and aggression dimensions, the associations of ENE with Destructive Aggression (adjusted *p* = 0.015) and Total Social Physique Anxiety with Destructive Aggression (adjusted *p* = 0.029) remained statistically significant.

In contrast, the associations of ENE with Passive Aggression (adjusted *p* = 0.052) and Total Social Physique Anxiety with Passive Aggression (adjusted *p* = 0.095) did not remain statistically significant.

These findings indicate that some of the small associations were sensitive to correction for multiple testing. Expectations of Negative Evaluation was weakly and negatively correlated with Destructive Aggression (*r* = -0.158, *p* = 0.002) and Passive Aggression (*r* = -0.135, *p* = 0.007), whereas its correlation with Assertiveness was not statistically significant (*r* = -0.013, *p* = 0.802).

However, after the Holm adjustment for multiple testing, the association between ENE and Destructive Aggression remained statistically significant (adjusted *p* = 0.015), whereas the association between ENE and Passive Aggression did not (adjusted *p* = 0.052). Total Social Physique Anxiety was weakly and negatively correlated with

Destructive Aggression ($r = -0.146$, $p = 0.004$) and Passive Aggression ($r = -0.121$, $p = 0.016$), whereas no statistically significant correlation was observed with Assertiveness ($r = 0.001$, $p = 0.985$). After Holm adjustment, the association with Destructive Aggression remained statistically significant (adjusted $p = 0.029$), whereas the association with Passive Aggression did not (adjusted $p = 0.095$). Physical Appearance Comfort was not significantly correlated with Destructive Aggression ($r = -0.030$, $p = 0.554$), Assertiveness ($r = 0.026$, $p = 0.606$), or Passive Aggression ($r = -0.019$, $p = 0.703$).

Regarding the intercorrelations among the aggression dimensions, a strong positive correlation was found between Destructive Aggression and Passive Aggression ($r = 0.743$, $p < 0.001$). Significant positive correlations were also observed between Destructive Aggression and Assertiveness ($r = 0.395$, $p < 0.001$) and between Assertiveness and Passive Aggression ($r = 0.321$, $p < 0.001$).

Comparison of Social Physique Anxiety and Aggression Levels Between Team and Individual Athletes

Independent-samples t tests were conducted to determine whether social physique anxiety and aggression scores differed between team and individual athletes. The results are presented in Table 5.

Table 5. Comparison of Social Physique Anxiety and Aggression Scores Between Team and Individual Athletes

Variable	Team Sports ($n = 282$), $M \pm SD$	Individual Sports ($n = 113$), $M \pm SD$	t	p	Cohen's d	Mean difference	95% CI
Physical Appearance Comfort	9.71 $\pm$ 3.49	10.81 $\pm$ 4.19	-2.451 ^a	0.015	-0.295	-1.093	[-1.972, -0.213]
Expectations of Negative Evaluation	18.34 $\pm$ 6.73	20.81 $\pm$ 7.56	-3.180	0.002	-0.354	-2.470	[-3.997, -0.943]
Total Social Physique Anxiety	28.06 $\pm$ 8.11	31.62 $\pm$ 8.68	-3.868	< 0.001	-0.431	-3.563	[-5.374, -1.752]
Destructive Aggression	28.59 $\pm$ 13.06	29.42 $\pm$ 13.19	-0.571	0.568	-0.064	-0.833	[-3.699, 2.034]
Assertiveness	38.36 $\pm$ 12.56	38.02 $\pm$ 11.80	0.250	0.803	0.028	0.344	[-2.359, 3.047]
Passive Aggression	27.68 $\pm$ 12.25	28.27 $\pm$ 11.64	-0.439	0.661	-0.049	-0.590	[-3.233, 2.053]

^a Because the assumption of homogeneity of variance was not met for Physical Appearance Comfort (Levene's test, $p = 0.027$), the Welch-corrected t test result is reported. The sign of Cohen's d indicates the direction of the difference between the group means. CI = confidence interval for the mean difference (team sports – individual sports). In the Holm-adjusted sensitivity analysis of the six between-group comparisons, the differences in ENE and Total Social Physique Anxiety remained statistically significant (adjusted $p = 0.008$ and $p < 0.001$, respectively), whereas the difference in PAC did not remain statistically significant (adjusted $p = 0.061$).

At the unadjusted level, Physical Appearance Comfort differed between team and individual athletes ($t = -2.451$, $p = 0.015$, $d = -0.295$), with individual athletes reporting a higher mean score ($M = 10.81$, $SD = 4.19$) than team athletes ($M = 9.71$, $SD = 3.49$). However, this difference did not remain statistically significant after Holm adjustment for the six between-group comparisons (adjusted $p = 0.061$). Moreover, because the PAC subscale demonstrated low internal consistency in the present sample ($\alpha = 0.451$), this result should be interpreted cautiously. Expectations of Negative Evaluation differed significantly between team and individual athletes ($t = -3.180$, $p = 0.002$, $d = -0.354$), with individual athletes reporting higher scores ($M = 20.81$, $SD = 7.56$) than team athletes ($M = 18.34$, $SD = 6.73$). This difference remained statistically significant after

Holm adjustment (adjusted $p = 0.008$). Total Social Physique Anxiety also differed significantly between team and individual athletes ($t = -3.868$, $p < 0.001$, $d = -0.431$). Individual athletes had a higher mean Total Social Physique Anxiety score ($M = 31.62$, $SD = 8.68$) than team athletes ($M = 28.06$, $SD = 8.11$).

This difference remained statistically significant after Holm adjustment (adjusted $p < 0.001$), and Cohen's d indicated a small-to-moderate between-group difference. In contrast, no statistically significant differences were found between team and individual athletes in Destructive Aggression ($t = -0.571$, $p = 0.568$, $d = -0.064$), Assertiveness ($t = 0.250$, $p = 0.803$, $d = 0.028$), or Passive Aggression ($t = -0.439$, $p = 0.661$, $d = -0.049$). The corresponding effect sizes were close to zero, indicating very small between-group differences across the aggression dimensions. Associations of Expectations of Negative Evaluation with Aggression Tendencies After Accounting for Sport Type. Multiple linear regression analyses were conducted to examine whether Expectations of Negative Evaluation remained statistically associated with Destructive and Passive Aggression after accounting for sport type. The results are presented in Table 6.

Table 6. Multiple Linear Regression Analyses of Expectations of Negative Evaluation and Sport Type in Relation to Aggression Tendencies

Dependent Variable	Independent Variable	B	SE	95% CI for B	β	t	p
Destructive Aggression	Expectations of Negative Evaluation	-0.309	0.094	[-0.493, -0.126]	-0.167	-3.309	0.001
	Sport Type	1.597	1.458	[-1.270, 4.464]	0.055	1.095	0.274
Passive Aggression	Expectations of Negative Evaluation	-0.242	0.087	[-0.412, -0.072]	-0.142	-2.796	0.005
	Sport Type	1.188	1.350	[-1.466, 3.842]	0.045	0.880	0.379

Note. Destructive Aggression model: $R^2 = 0.028$, adjusted $R^2 = 0.023$, $F = 5.64$, $p = 0.004$. Passive Aggression model: $R^2 = 0.020$, adjusted $R^2 = 0.015$, $F = 4.01$, $p = 0.019$. Sport type was coded as team sport = 0 and individual sport = 1. CI = confidence interval for the unstandardized regression coefficient (B).

After accounting for sport type, Expectations of Negative Evaluation remained significantly and negatively associated with Destructive Aggression ($B = -0.309$, $\beta = -0.167$, $t = -3.309$, $p = 0.001$). Sport type was not statistically significantly associated with Destructive Aggression in the model ($B = 1.597$, $\beta = 0.055$, $t = 1.095$, $p = 0.274$). The overall model was statistically significant ($F = 5.64$, $p = 0.004$) and explained 2.8% of the variance in Destructive Aggression ($R^2 = 0.028$). Similarly, Expectations of Negative Evaluation remained significantly and negatively associated with Passive Aggression after accounting for sport type ($B = -0.242$, $\beta = -0.142$, $t = -2.796$, $p = 0.005$). Sport type was not statistically significantly associated with Passive Aggression in the model ($B = 1.188$, $\beta = 0.045$, $t = 0.880$, $p = 0.379$). The overall model was statistically significant ($F = 4.01$, $p = 0.019$) and explained 2.0% of the variance in Passive Aggression ($R^2 = 0.020$). Thus, although the associations of ENE with Destructive and Passive Aggression remained statistically significant after accounting for sport type, the explanatory power of both models was low.

Moderating Role of Sport Type

Moderation analyses were conducted to determine whether the relationships between Expectations of Negative Evaluation and aggression tendencies differed

according to sport type. Expectations of Negative Evaluation scores were mean-centered, sport type was coded as team sport = 0 and individual sport = 1, and the Expectations of Negative Evaluation $\times$ Sport Type interaction term was entered into the regression models. The results are presented in Table 7.

Table 7. Moderation Analyses of the Role of Sport Type in the Relationships Between Expectations of Negative Evaluation and Aggression Tendencies

Dependent Variable	Independent Variable	B	SE	95% CI for B	t	p
Destructive Aggression	ENE	-0.382	0.107	[-0.607, -0.156]	-3.57	< 0.001
	Sport Type	1.747	1.466	[-1.495, 4.284]	1.19	0.234
	ENE $\times$ Sport Type	0.216	0.198	[-0.173, 0.606]	1.09	0.276
Passive Aggression	ENE	-0.285	0.105	[-0.494, -0.077]	-2.71	0.007
	Sport Type	1.268	1.359	[-1.611, 3.743]	0.93	0.351
	ENE $\times$ Sport Type	0.130	0.184	[-0.231, 0.491]	0.71	0.480

Note. ENE = Expectations of Negative Evaluation. ENE scores were mean-centered before the analyses. Sport type was coded as team sport = 0 and individual sport = 1. CI = confidence interval for the unstandardized regression coefficient (B). Destructive Aggression model: $R^2 = 0.031$, $F = 4.16$, $p = 0.006$. Passive Aggression model: $R^2 = 0.021$, $F = 2.84$, $p = 0.038$.

In the Destructive Aggression model, the ENE $\times$ Sport Type interaction term was not statistically significant ($B = 0.216$, $SE = 0.198$, $t = 1.09$, $p = 0.276$). Similarly, the ENE $\times$ Sport Type interaction was not statistically significant in the Passive Aggression model ($B = 0.130$, $SE = 0.184$, $t = 0.71$, $p = 0.480$). Thus, the analyses provided no statistically significant evidence that sport type moderated the relationships between ENE and either Destructive or Passive Aggression. The Destructive Aggression model as a whole was statistically significant ($R^2 = 0.031$, $F = 4.16$, $p = 0.006$) and explained 3.1% of the variance in the dependent variable. The Passive Aggression model was also statistically significant ($R^2 = 0.021$, $F = 2.84$, $p = 0.038$), explaining 2.1% of the variance. Nevertheless, the proportion of explained variance was low in both models. Accordingly, the principal finding of the moderation analyses was that the relationships between Expectations of Negative Evaluation and aggression tendencies did not differ significantly between team and individual athletes.

DISCUSSION

In the present study, comparisons of social physique anxiety levels between team and individual athletes revealed that individual athletes had significantly higher total social physique anxiety scores than team athletes. Similarly, individual athletes had higher scores on the Expectations of Negative Evaluation (ENE) subscale. The small-to-moderate effect size for the difference in total social physique anxiety ($d = 0.431$) indicates that this difference was noteworthy not only in terms of statistical significance but also in terms of its magnitude. Social physique anxiety refers to the anxiety experienced when an individual's physical appearance is observed or evaluated by others (Hart et al., 1989). Given that sport settings combine bodily visibility, physical performance, and social evaluation, social physique anxiety represents an important psychological variable for athletes. Van Raalte et al. (1998), in their study of female athletes, demonstrated that social physique anxiety may vary according to characteristics

of sport participation, competitive level, and physical characteristics. Among the swimmers included in their study, NCAA Division I athletes exhibited lower social physique anxiety than recreational swimmers. This finding suggests that social physique anxiety should not be regarded as a fixed characteristic among athletes and that features of the sporting context should also be considered.

Research conducted in a Turkish sample by Mülazımoğlu-Ballı et al. (2010) also suggests that the context of sport participation may be relevant to social physique anxiety. The researchers examined 255 exercise participants, 261 competitive athletes, and 350 non-exercisers and reported that competitive athletes and exercise participants had lower levels of social physique anxiety than non-exercisers. Although that study did not directly compare team and individual athletes, its findings support the consideration of social physique anxiety within the context of the form and experience of sport participation.

A finding more closely related to that of the present study was reported by Gay et al. (2011). In their study of 404 female athletes aged 11–16 years, athletes participating in individual aesthetic sports were more likely to exhibit high social physique anxiety than those participating in non-aesthetic sports. However, the classification of “individual aesthetic sports” used in that study is not equivalent to the broader “individual sport–team sport” classification employed in the present study. Therefore, the findings reported by Gay et al. (2011) should not be considered a direct confirmation of the present results, but rather as complementary evidence suggesting that social physique anxiety may be more pronounced in certain individual sport contexts.

The higher social physique anxiety observed among individual athletes may be considered in relation to the structural characteristics of individual sports. In individual sports, performance and competitive outcomes may be more directly attributed to the athlete's own performance, potentially creating a context in which awareness of one's physical competence and appearance becomes more salient. In team sports, by contrast, performance responsibility is distributed among team members, and social interactions among athletes may contribute to a different experience of individual evaluation. However, team identification, social support, bodily visibility within the sport environment, performance evaluation, and sport-specific aesthetic expectations were not directly measured in the present study. These explanations should therefore be regarded as possible mechanisms for interpreting the observed differences rather than as causal conclusions. Previous research has similarly indicated that social physique anxiety may be associated with characteristics such as level of sport participation, physical characteristics, competitive level, and the aesthetic demands of sport (Gay et al., 2011; Mülazımoğlu-Ballı et al., 2010; Van Raalte et al., 1998).

Regarding aggression, no significant differences were found between team and individual athletes in Destructive Aggression, Assertiveness, or Passive Aggression. The very small effect sizes observed in these comparisons further indicate that the two groups displayed similar profiles across the aggression dimensions in the present sample. Thus,

sport type alone did not appear to be a strong differentiating variable for aggression tendencies in this sample.

Studies comparing aggression levels between team and individual athletes have produced varying findings. One study that can be directly compared with the present research was conducted by Tutkun et al. (2010). Using the Kiper Aggression Inventory, which was also employed in the present study, the researchers examined destructive aggression, assertiveness, and passive aggression among 240 athletes, including 120 team-sport and 120 individual-sport athletes. Significant differences between team and individual athletes were reported for destructive aggression, passive aggression, and overall aggression (Tutkun et al., 2010). These findings differ from those of the present study, in which no significant differences were observed between team and individual athletes across the examined aggression dimensions.

Similarly, Taily and Bhat (2023) reported a significant difference in aggression between team and individual athletes, with team athletes exhibiting higher aggression. However, direct comparison with the present study is limited because their aggression measure differed from the Kiper Aggression Inventory and their sample consisted exclusively of male participants.

In contrast, significant differences in aggression do not emerge in every study in which athletes are classified according to different sporting characteristics. Basiaga-Pasternak et al. (2020) compared competitive and non-competitive athletes participating in kickboxing and mixed martial arts and found no significant group differences across the aggression dimensions examined. Similarly, Khan et al. (2017) reported no significant difference in overall aggression between athletes and non-athletes. Nevertheless, because the group classifications in these studies differ from the team–individual sport classification used in the present study, these findings should not be considered direct supporting evidence. Rather, they provide complementary evidence indicating that different forms of sport-related grouping do not necessarily result in differences in aggression.

These varying findings suggest that explaining aggression solely in terms of whether a sport is team-based or individual may be insufficient. Factors such as the level of physical contact inherent in the sport, competitive level, sport experience, and athletes' individual and social characteristics may also be relevant to aggression tendencies. Accordingly, the absence of a significant difference in the present study should not be interpreted as indicating that sport type is entirely irrelevant to aggression. A more limited interpretation consistent with the findings is that participation in team versus individual sports did not significantly differentiate Destructive Aggression, Assertiveness, or Passive Aggression in the present sample.

Another major finding of the study was that the relationship between social physique anxiety and aggression tendencies varied across the dimensions of both constructs. At the unadjusted level, ENE showed weak negative correlations with Destructive and Passive Aggression, and Total Social Physique Anxiety showed a similar pattern. However, the Holm-adjusted sensitivity analysis indicated that only the associations of ENE with Destructive Aggression and Total Social Physique Anxiety with Destructive Aggression remained statistically significant after adjustment for multiple testing. The

associations of ENE and Total Social Physique Anxiety with Passive Aggression did not remain statistically significant after adjustment. Neither ENE nor Total Social Physique Anxiety was significantly associated with Assertiveness, and PAC was not significantly associated with any aggression dimension. These results indicate that the small associations involving Passive Aggression were sensitive to correction for multiple testing and should not be interpreted as robust findings.

Social physique anxiety is closely related to self-presentational evaluations, and the social and evaluative nature of sport and exercise environments plays an important role in this form of anxiety (Hart et al., 1989; Sabiston et al., 2014). In this context, the association between ENE and Destructive Aggression is noteworthy, although its magnitude was small. Because ENE reflects the expectation that one's physical appearance may be negatively evaluated by others, it more directly represents the interpersonal evaluative component of social physique anxiety. Nevertheless, the inverse association observed in the present study should be interpreted cautiously. Behavioral responses to social physique anxiety would not necessarily be expected to manifest as outwardly directed aggression. Cox et al. (2011) reported that higher social physique anxiety was associated with avoidance of participation and less adaptive forms of motivation in physical education settings. Brewer et al. (2004) examined social physique anxiety in relation to protective self-presentational exercise behaviors. Although these studies did not directly investigate aggression, they contribute to the interpretation of the present findings by demonstrating that the behavioral correlates of social physique anxiety are not limited to externally directed responses.

Importantly, the negative association observed between ENE and Destructive Aggression should not be interpreted as evidence that social physique anxiety has a protective effect against aggression. The cross-sectional design does not permit such a causal inference, and the magnitude of the association was small ($r = -0.158$). Thus, rather than demonstrating that increased social physique anxiety reduces aggression, the finding indicates only a weak inverse covariation between ENE and Destructive Aggression in the present sample. The unadjusted correlation between ENE and Passive Aggression was also negative ($r = -0.135$), but this association did not remain statistically significant after Holm adjustment (adjusted $p = 0.052$) and therefore warrants particular caution.

Studies examining relationships between other forms of anxiety and aggression among athletes have reported findings that differ from those observed in the present study. Tiric-Campara et al. (2012), in a study of combat-sport athletes, identified positive relationships between general anxiety and several components of aggression. Similarly, Korobeynikov et al. (2019) reported that higher aggression among elite Greco-Roman wrestlers co-occurred with greater subjective psychological distress. However, social physique anxiety was not directly measured in either of these studies. Their findings therefore cannot be directly compared with those of the present study; instead, they suggest that different forms of psychological distress and anxiety may exhibit different patterns of association with aggression.

The findings regarding Assertiveness are also important in this context. Neither ENE nor Total Social Physique Anxiety was significantly associated with Assertiveness in the

present study. Within the Kiper Aggression Inventory, Assertiveness is evaluated as a dimension distinct from Destructive and Passive Aggression. Taken together with the Holm-adjusted findings, this pattern indicates that the dimensions of the aggression inventory were not uniformly associated with social physique anxiety, with the most robust inverse associations being observed for Destructive Aggression.

The absence of significant associations between PAC and any of the aggression dimensions should be interpreted in light of the measurement characteristics observed in the present study. Cronbach's alpha for the PAC subscale was 0.451, indicating low internal consistency in this sample. Consequently, it would not be appropriate to conclude that the nonsignificant correlations involving PAC solely reflect a genuine absence of psychological association. Because low measurement reliability may attenuate observed relationships, findings concerning PAC should be interpreted within the context of this measurement limitation.

The multiple linear regression analyses further indicated that ENE remained statistically and negatively associated with Destructive and Passive Aggression after accounting for sport type. For Destructive Aggression, ENE showed a significant negative association ($\beta = -0.167$, $p = 0.001$), whereas sport type was not statistically significantly associated with the outcome. Similarly, ENE remained negatively associated with Passive Aggression after accounting for sport type ($\beta = -0.142$, $p = 0.005$), whereas sport type was not statistically significantly associated with Passive Aggression. These regression findings indicate that the associations between ENE and the aggression outcomes were not accounted for by the team–individual sport classification included in the models.

However, the explanatory power of these models was low. The model including ENE and sport type explained approximately 2.8% of the variance in Destructive Aggression and approximately 2.0% of the variance in Passive Aggression. Accordingly, the statistical significance of the ENE coefficients should not be interpreted as evidence of a strong or causal influence on aggression tendencies. Rather, ENE demonstrated small statistical associations with Destructive and Passive Aggression after accounting for sport type. It is also important to distinguish these regression results from the Holm-adjusted correlation sensitivity analysis: the unadjusted ENE–Passive Aggression correlation did not remain statistically significant after Holm adjustment, whereas the regression coefficient for ENE in the Passive Aggression model was statistically significant after accounting for sport type. Given the small effect sizes, low explained variance, and limited literature directly examining social physique anxiety and aggression tendencies together in athlete samples, these findings should be re-examined across different samples and sport disciplines.

Finally, the study examined whether the relationship between ENE and aggression differed between team and individual athletes. The moderation analyses indicated that the ENE $\times$ Sport Type interaction term was not statistically significant for either Destructive Aggression ($p = 0.276$) or Passive Aggression ($p = 0.480$). Because moderation is evaluated on the basis of the statistical significance of the interaction between the independent variable and the moderator (Bedeian & Mossholder, 1994), the

present findings provide no statistically significant evidence that sport type moderated the relationships between ENE and destructive or passive aggression.

This finding is particularly noteworthy given that significant differences in social physique anxiety levels were observed between team and individual athletes. In other words, although mean social physique anxiety levels differed according to sport type, it did not significantly alter the strength of the association between ENE and aggression. A between-group difference in the mean level of a variable and moderation of the relationship between two variables represent statistically distinct phenomena. Therefore, the statistical significance of particular within-group slopes should not be interpreted as evidence that the association is stronger among team athletes than among individual athletes; such a between-group difference would require a significant ENE $\times$ Sport Type interaction, which was not observed in the present study.

Similarly, Kuśnierz et al. (2026) reported that sport discipline did not significantly moderate the relationships between emotion-regulation strategies and total aggression, physical aggression, or anger among combat-sport athletes, although a moderating effect was identified for the relationship between cognitive reappraisal and hostility. Although the psychological variables and sport classifications examined in that study differ from those of the present research, its findings may be considered alongside the present results in suggesting that sport category does not necessarily alter the relationships between psychological variables and all dimensions of aggression.

Overall, the findings indicate that team and individual athletes differed in their levels of social physique anxiety but not in the aggression dimensions examined. The relationships between social physique anxiety and aggression were small and varied across aggression dimensions. After adjustment for multiple testing, the most robust correlational findings involved the inverse associations of ENE and Total Social Physique Anxiety with Destructive Aggression, whereas the corresponding associations with Passive Aggression did not remain statistically significant. Regression analyses nevertheless indicated small negative associations of ENE with both Destructive and Passive Aggression after accounting for sport type, although the models explained only a small proportion of the variance. Finally, the absence of statistically significant ENE $\times$ Sport Type interactions indicates that the team–individual sport distinction did not significantly moderate the examined associations.

CONCLUSION

The present study examined the relationships between social physique anxiety and aggression tendencies among team and individual athletes and investigated whether sport type moderated the associations between Expectations of Negative Evaluation (ENE) and aggression tendencies.

Individual athletes reported higher Total Social Physique Anxiety and ENE scores than team athletes, and these differences remained statistically significant after adjustment for multiple testing. Although a between-group difference in Physical Appearance Comfort (PAC) was observed at the unadjusted level, this difference did not remain statistically significant after Holm adjustment and should also be interpreted

cautiously because of the low internal consistency of the PAC subscale in the present sample. In contrast, no statistically significant differences were found between team and individual athletes in Destructive Aggression, Assertiveness, or Passive Aggression.

The associations between social physique anxiety and aggression were generally weak and varied across aggression dimensions. After adjustment for multiple testing, the inverse associations of ENE and Total Social Physique Anxiety with Destructive Aggression remained statistically significant, whereas their associations with Passive Aggression did not. Neither ENE nor Total Social Physique Anxiety was significantly associated with Assertiveness, and PAC was not significantly associated with any aggression dimension.

Multiple regression analyses indicated that ENE remained negatively associated with both Destructive and Passive Aggression after accounting for sport type. However, the models explained only approximately 2–3% of the variance, indicating limited explanatory power. These associations should therefore not be interpreted as evidence of strong or causal effects.

Finally, the moderation analyses provided no statistically significant evidence that sport type altered the associations of ENE with Destructive or Passive Aggression. Thus, although individual athletes exhibited higher levels of social physique anxiety than team athletes, the strength of the examined associations between ENE and aggression did not statistically differ between team and individual athletes. Overall, the findings indicate that sport type was associated with differences in social physique anxiety levels in the present sample, whereas the relationships between social physique anxiety and aggression were small, dimension-specific, and not significantly moderated by sport type.

LIMITATIONS

Several limitations should be considered when interpreting the findings of the present study. First, the cross-sectional and correlational nature of the study does not permit causal interpretations of the relationships identified between social physique anxiety and aggression. Therefore, it cannot be inferred that ENE increases or decreases aggression; the findings reflect covariation between the variables.

Second, the number of team athletes ($n = 282$) was greater than the number of individual athletes ($n = 113$). This imbalance in group sizes represents a sample characteristic that should be considered when interpreting comparisons between team and individual athletes.

Another limitation concerns the classification of team and individual sports as broad categories encompassing different sport disciplines. Sport disciplines may differ substantially in terms of physical contact, aesthetic expectations, emphasis on body weight, methods of performance evaluation, and competitive environment. Therefore, the team–individual sport classification may not fully reflect sport-specific differences.

The reliance on self-report measurement instruments should also be acknowledged as a limitation. Assessing characteristics that are sensitive to social evaluation, such as social physique anxiety and particularly aggression, through self-report measures may

result in responses being influenced by social desirability or self-presentational tendencies.

In addition, the Cronbach's alpha coefficient of 0.451 obtained for the PAC subscale represents an important measurement limitation. Consequently, the absence of significant associations between PAC and the aggression variables cannot be attributed solely to a genuine theoretical absence of association. Low internal consistency may have contributed to attenuation of the observed relationships. In contrast, the higher internal consistency coefficients obtained for ENE and the three subscales of the Kiper Aggression Inventory provide a comparatively stronger measurement basis for interpreting findings involving these variables.

Finally, the low proportion of variance explained by the regression models indicates that aggression tendencies may be associated with additional variables not examined in the present study. Therefore, the small magnitude of the statistically significant relationships identified in the study should be taken into account, and these findings should not be interpreted as evidence of strong or causal relationships.

RECOMMENDATIONS

Based on the findings and limitations of the present study, future research should consider more detailed classifications of team and individual sports. In particular, examining sport-specific characteristics such as contact versus non-contact sports, aesthetic versus non-aesthetic sports, and weight-class versus non-weight-class sports may provide a more detailed understanding of the sporting conditions under which social physique anxiety and aggression tendencies differ.

Longitudinal studies may also be useful for examining the mechanisms underlying the weak associations between social physique anxiety and aggression. Furthermore, incorporating psychosocial variables such as perceived social support, team identification, self-esteem, body satisfaction, emotion regulation, competitive level, and sport experience into research models may contribute to the development of more comprehensive explanations of aggression.

Future studies should also consider gender together with variables such as sport discipline and competitive level. More balanced sample sizes between team and individual athlete groups may improve the robustness of between-group comparisons. Given the limited research directly examining social physique anxiety and aggression together in athlete samples, replication across different age groups, competitive levels, and sport disciplines would also contribute to evaluating the generalizability of the present findings.

From a measurement perspective, given the low internal consistency observed for the PAC subscale in the present study, future research should reassess the measurement properties of the Social Physique Anxiety Scale across different athlete samples. Such research may help determine the extent to which findings concerning its subscales are affected by measurement error.

From an applied perspective, psychosocial assessments of athletes may benefit from considering not only aggression levels but also athletes' concerns regarding how their

physical appearance is evaluated by others. The higher levels of social physique anxiety observed among individual athletes suggest that coaches and professionals working in sport psychology may benefit from considering body-related perceptions and experiences of social evaluation among these athletes. However, because the present study did not evaluate the effectiveness of any intervention, the findings should not be used to infer that a specific psychological intervention would necessarily be effective.

Kısaltmalar / Abbreviations

SPA — Social Physique Anxiety

PAC — Physical Appearance Comfort

ENE — Expectations of Negative Evaluation

α — Cronbach's Alpha Internal Consistency Coefficient

B — Unstandardized Regression Coefficient

β — Standardized Regression Coefficient

SE — Standard Error

R^2 — Coefficient of Determination

F — F-test Statistic

t — t-test Statistic

r — Pearson Correlation Coefficient

p — Significance Value

d — Cohen's Effect Size

n — Group or Sample Size

N — Total Number of Participants

M — Mean

SD — Standard Deviation

Min — Minimum Value

Max — Maximum Value

Beyanlar / Declarations

Etik Onay ve Katılım Onayı / Ethics approval and consent to participate

Bu çalışmanın hazırlanması, yürütülmesi ve raporlanması sürecinde bilimsel araştırma ve yayın etiğine ilişkin ilkelere uyulmuştur. Araştırmaya katılım gönüllülük esasına dayalı olarak gerçekleştirilmiş ve katılımcı verilerinin gizliliği gözetilmiştir. Araştırmada kullanılan veri toplama araçları ve araştırma süreci, Kafkas Üniversitesi Sağlık Bilimleri Fakültesi Girişimsel Olmayan Araştırmalar Etik Kurulu tarafından etik açıdan uygun bulunmuştur (Karar tarihi: 30.06.2025; Sayı: 81829502.903.44). Araştırma kapsamında elde edilen veriler üzerinde herhangi bir tahrifat yapılmamış ve bilimsel araştırma etiğine aykırı herhangi bir işlem gerçekleştirilmemiştir. Makale ile ilgili doğabilecek etik ihlallerden yazar sorumludur.

The preparation, conduct, and reporting of this study were carried out in accordance with the principles of scientific research and publication ethics. Participation in the study was voluntary, and the confidentiality of participant data was maintained. The data collection instruments and research procedures were reviewed and approved by the Kafkas University Faculty of Health Sciences Non-Interventional Research Ethics Committee (Decision date: June 30, 2025; Reference No.: 81829502.903.44). No alteration or manipulation was made to the data obtained within the scope of the study, and no procedures contrary to scientific research ethics were undertaken. The author assumes responsibility for any ethical issues that may arise in relation to the manuscript.

Veri Ve Materyal Erişilebilirliği / Availability of data and material

Bu çalışmanın bulgularını destekleyen veriler, makul ve bilimsel amaçlı talepler doğrultusunda sorumlu yazardan temin edilebilir. Veri setinin paylaşımı, katılımcıların gizliliği ve araştırma etiği ilkeleri gözetilerek gerçekleştirilecektir. Veriler yalnızca akademik ve bilimsel amaçlarla kullanılmak üzere erişime sunulacak; verilerin kullanımında özgün çalışmaya uygun biçimde atıf yapılması ve katılımcılara ilişkin gizliliğin korunması gerekecektir.

The data supporting the findings of this study are available from the corresponding author upon reasonable request for scientific purposes. Any sharing of the dataset will be conducted in accordance with research ethics principles

and with due consideration for the confidentiality of the participants. The data will be made available solely for academic and scientific purposes, and any use of the dataset should appropriately acknowledge the original study and maintain participant confidentiality.

Çıkar Çatışması / Competing interests

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The author declares that there are no known financial or non-financial competing interests or personal relationships that could have influenced the work reported in this manuscript.

Yazar Katkıları / Authors' Contribution Statement

Yazar, makalenin tüm aşamalarını yürütmüş, içeriğini eleştirel olarak gözden geçirmiş ve makalenin son halini onaylamıştır.

The author conducted all stages of the study, critically reviewed the content, and approved the final version of the manuscript.

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