

The relationship between trait anger, psychological maladjustment, psychological resilience and loneliness levels of athletes and physical inactive individuals

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Abstract

Background and Study Aim Trait anger, psychological maladjustment, resilience, and loneliness are crucial aspects influencing mental health in both athletes and physically inactive individuals. Exploring these factors provides valuable insights into their psychological well-being. The study aims to investigate the relationship between trait anger, psychological maladjustment, psychological resilience, and loneliness among athletes and physically inactive individuals, with a particular focus on the predictive role of psychological resilience in these relationships.

Material and Methods The sample consisted of 793 individuals divided into three groups. These included 176 participants selected randomly, 120 team athletes, and 497 sedentary individuals. Data collection involved the following tools: the Demographic Information Form, the Trait Anger and Anger Expression Style Scale, the Psychological Maladjustment Scale, the Psychological Resilience Scale, and the Loneliness Scale. Cronbach's Alpha coefficients were calculated to assess the reliability of the scales. Multiple regression analysis was performed to explore the relationship between loneliness, psychological resilience, anger traits, anger expression styles, and levels of depression, stress, and anxiety. The statistical analysis was conducted using SPSS 24.

Results For combat athletes, outward anger, anger control, and stress significantly predicted psychological resilience ($R = .653$, $F = 15.557$, $p < .05$), explaining 43% of the variance. Among team athletes, anger control emerged as a significant predictor ($R = .605$, $F = 7.784$, $p < .05$), accounting for 37% of the variance. For physically inactive individuals, outward anger, anger control, anxiety, and stress predicted psychological resilience ($R = .545$, $F = 25.768$, $p < .05$), explaining 30% of the variance. Across all groups, the key predictors were anxiety ($\beta = -.219$, $p < .05$), stress ($\beta = -.190$, $p < .05$), anger control ($\beta = .196$, $p < .05$), and outward anger ($\beta = .189$, $p < .05$).

Conclusions Targeted interventions focused on anger control and stress reduction can effectively enhance psychological resilience. These strategies may support both athletes and physically inactive individuals in managing psychological maladjustment and reducing loneliness.

Keywords: sports, psychological resilience, psychological maladjustment, loneliness, anger

Introduction

Trait anger, psychological maladjustment, resilience, and loneliness are key psychological constructs that significantly influence individuals' mental well-being. Athletes and physically inactive individuals often exhibit differing levels of these factors due to variations in lifestyle, physical activity, and coping mechanisms. Understanding these differences can provide valuable insights into their psychological health and inform strategies to promote well-being.

In this context, numerous studies provide comprehensive insights into the interrelations between anger, loneliness, psychological maladjustment, and resilience, emphasizing their significance for understanding mental health dynamics. Anger is generally defined as an emotional response to unmet needs, undesired outcomes,

or unfulfilled expectations. When expressed in a natural, constructive manner, anger can positively influence interpersonal communication and motivate individuals to address and resolve conflicts. However, if uncontrolled and expressed through destructive behaviors, anger can escalate into aggression, damaging relationships and leading to social isolation [1, 2].

Loneliness, conversely, is widely characterized in the literature as an unpleasant emotional state often accompanied by anxiety, anger, sadness, stress, depression, and pessimism. Beyond its emotional impact, loneliness has been linked to physical health problems, such as cardiovascular diseases and weakened immune function. It is closely associated with numerous psychological issues, including low self-esteem, poor social skills, depression, substance abuse, obesity, suicidal tendencies, and even premature mortality [3, 4].

Psychological maladjustment refers to a state

of distress encompassing anxiety, depression, and stress [5]. It describes a condition in which individuals face behavioral, cognitive, or emotional difficulties that hinder their ability to adapt to environmental demands. This maladjustment often impairs decision-making, problem-solving, and overall life satisfaction [6].

Psychological resilience, defined concisely, is the capacity to recover quickly from adverse situations such as illness, depression, or anxiety. Resilient individuals demonstrate the ability to overcome challenges with minimal long-term impact. Importantly, resilience has been shown to mediate the effects of stress and adversity, enabling individuals to maintain their mental health and pursue personal growth [7].

The analysis of previous research reveals that numerous studies have shed light on the roles of anger, loneliness, psychological maladjustment, and resilience in shaping mental health outcomes. These findings highlight the complex interplay between these factors and their significant impact on individuals' well-being. However, despite the growing body of evidence, there remains a need for more in-depth studies to explore the nuanced relationships among these constructs, particularly in the context of athletes and physically inactive individuals.

The study aims to investigate the relationship between trait anger, psychological maladjustment, psychological resilience, and loneliness among athletes and physically inactive individuals, with a particular focus on the predictive role of psychological resilience in these relationships.

Materials and Methods

Participants

The research population consisted of active combat and team sport athletes registered with relevant federations in Turkey, as well as physically inactive individuals enrolled at the Kazım Karabekir Faculty of Education, Atatürk University. The sample comprised a total of 793 individuals, divided as follows: 176 participants were randomly selected, 120 were team athletes, and 497 were classified as sedentary.

Research Design

The relational screening model, which aims to determine the relationship between at least two or more variables, was used. In this model, the existence and nature of the relationship between variables were examined, with a focus on how the variables changed together [8, 9].

Data Collection Tools

Data were collected through online surveys hosted on Google Forms, enabling participants to complete the scales remotely. This approach facilitated efficient data collection from a diverse

group of individuals across various locations while ensuring participant privacy and convenience. The demographic characteristics of the participants are presented in Table 1.

Table 1. Statistics on Demographic Information of Participants

Category	Demographic Variables	N	%
Gender	Female	346	43.6
	Male	447	56.4
Age	Ages 18 and Under	164	20.7
	19–23 Years Old	403	50.8
	24–28 Years Old	126	15.9
	Ages 29 and Above	100	12.6
Level of Education	High School	225	28.4
	License	521	65.7
	Postgraduate	47	5.9
Are you an active athlete?	Yes	296	37.3
	No	497	62.7
Sports Branch	Boxing	58	7.3
	Wrestle	38	4.8
	Taekwondo	61	7.7
	Kickboxing	19	2.4
	Football	27	3.4
	Basketball	6	0.8
	Volleyball	26	3.3
	Handball	33	4.2
	Other	28	3.5
	Physical Inactive	497	62.7
Sports Category	Combat Sports	176	22.2
	Team Sports	120	15.1
	Physical Inactive	497	62.7
Are you a national athlete?	Yes	82	27.7
	No	214	72.3
Total		793	100.0

Data were collected using the Trait Anger and Anger Expression Style Scale developed by Spielberger et al. [10] and adapted to Turkish by Özer [11], the Psychological Maladjustment Scale developed by Lovibond and Lovibond [12] and later adapted to Turkish by Akin and Çetin [13], the Psychological Resilience Scale developed by Smith et al. [14] and adapted to Turkish by Doğan [15], and the Loneliness Scale developed by Russell et al. [16] and adapted to Turkish by Demir [17]. Data were collected online via Google Forms.

In this study, data were collected using four well-established psychometric scales. The Trait Anger and Anger Expression Style Scale, developed by Spielberger et al. [10] and adapted to Turkish by Özer

[11], consists of 34 items and measures *trait anger* and its expression across three subdimensions: *anger-out* (8 items), *anger-in* (8 items), and *anger control* (8 items). Each item is rated on a 4-point Likert scale. The internal consistency coefficients for these subscales range from .75 to .88.

The Psychological Maladjustment Scale (DASS-21), developed by Lovibond and Lovibond [12] and adapted to Turkish by Akin and Çetin [13], is a 21-item instrument assessing symptoms of depression, anxiety, and stress through 7 items per subscale, rated on a 4-point Likert scale. The reliability coefficients for the DASS-21 subscales in Turkish samples range from .80 to .89, with scores doubled to align with the severity ratings of the original DASS-42.

The Brief Psychological Resilience Scale, created by Smith et al. [14] and adapted to Turkish by Doğan [15], consists of 6 items that measure an individual's ability to recover from stress, rated on a 5-point Likert scale. The reliability coefficient in Turkish samples is .83.

Finally, the UCLA Loneliness Scale (Version 3), developed by Russell et al. [16] and adapted to Turkish by Demir [17], is a 20-item unidimensional

scale assessing subjective feelings of loneliness, rated on a 4-point Likert scale. The Turkish version of the scale demonstrates excellent internal consistency, with a reliability coefficient of .91.

All scales used in this study exhibited strong reliability and validity, ensuring accurate measurement of the constructs within the Turkish context.

Statistical Analysis

Reliability and Normality. Before data analysis, extreme values and missing data were examined using IBM SPSS 24. Internal consistency coefficients (Cronbach's Alpha) were calculated to assess the reliability of the scales used in the study. The conformity of the data to a normal distribution was then evaluated based on skewness and kurtosis values. The results are presented in Table 2.

As stated by George and Mallery [18], Cronbach's Alpha values below 0.50 are considered insufficient. Values between 0.50 and 0.60 are regarded as poor in terms of reliability, while those between 0.60 and 0.70 are considered acceptable. Values ranging from 0.70 to 0.90 indicate good reliability, and values exceeding 0.90 represent excellent reliability. Based on the values presented in Table 3, the reliability of

Table 2. Reliability Coefficients of the Scales Used

Variables Coefficients	Depression	Anxiety	Stress	Psychological Resilience	Loneliness	Trait Anger	Anger Directed Inward	Outward Anger	Anger Management
Cronbach's Alpha	.807	.803	.863	.803	.793	.880	.750	.826	.846
Skewness	0.452	0.419	0.392	-0.118	0.663	0.270	0.218	0.511	-0.280
Kurtosis	-0.241	-0.427	-0.638	-0.141	-0.090	-0.581	-0.282	0.018	-0.379

Table 3. Correlation and Reliability Values of the Relationship Between Psychological Resilience, Loneliness, Trait Anger, Anger Expression Style, and DAS

Variables	Depression	Anxiety	Stress	Psy Resilience	Loneliness	Trait Anger	Anger Directed Inward	Outward Anger	Anger Management
Depression	1								
Anxiety	.812**	1							
Stress	.819**	.807**	1						
Psy Resilience	-.474**	-.494**	-.504**	1					
Loneliness	.461**	.431**	.532**	-.381**	1				
Trait Anger	.484**	.581**	.490**	-.281**	.238**	1			
Anger Directed Inward	.531**	.528**	.542**	-.279**	.348**	.535**	1		
Outward Anger	.412**	.479**	.417**	-.159**	.144**	.747**	.511**	1	
Anger Management	-.154**	-.240**	-.165**	.268**	-.182**	-.240**	.120**	-.221**	1

Note: **p<.01

the study scales is deemed good. Additionally, data are considered to follow a normal distribution when skewness and kurtosis values fall between +1 and -1 [19].

Data Analysis. A multiple regression analysis was conducted to examine the relationship between participants' loneliness, psychological resilience, trait anger, anger expression styles, and their levels of depression, stress, and anxiety. Before proceeding to the findings, preliminary tests were performed to ensure that the assumptions required for the analysis were met. Additionally, the study analyzed whether loneliness, psychological resilience, trait anger, anger expression styles, and levels of depression, stress, and anxiety significantly differed based on the participants' sports categories.

Findings of Assumption Tests Conducted Before Multiple Regression Analysis: Before conducting the multiple regression analysis, the necessary assumptions were tested. This included normality, the presence of extreme values, linearity, and the absence of multicollinearity issues.

Detection of extreme values: The Z-score was used to identify extreme values. Data points with Z-scores greater than +3 or less than -3 were classified as extreme values. During the analysis, three extreme values were identified and subsequently removed from the data set.

Linearity Test: To meet another assumption of multiple regression analysis, the linear relationship between the independent and dependent variables was tested. The correlation analysis (Table 3) and variance inflation factor (VIF) values (Table 4) confirmed that the assumption of linearity was met.

Multicollinearity problem test: To assess the presence of multicollinearity among the independent variables, the correlation values between these variables were measured. The results are presented in Table 3.

Results

In Table 3, a significant relationship was observed between the subdimensions of loneliness, psychological resilience, and the Trait Anger and Anger Expression Style Scale, including trait anger, anger-in, anger-out, and anger control, as well as all subdimensions of the DAS scale (depression, anxiety, and stress).

To ensure the absence of multicollinearity, the correlation between variables should be less than .90 [20]. Based on the data in Table 4, it was concluded that there is no multicollinearity problem among the variables. Additionally, Variance Inflation Factor (VIF) and Tolerance Value (TV) were calculated to further test for multicollinearity, and the results are presented in Table 4.

Table 4. VIF and TV Values Calculated for Independent Variables

Independent Variable	TV	VIF
Trait Anger	0.363	2.757
Anger Directed Inward	0.483	2.069
Outward Anger	0.407	2.459
Anger Management	0.761	1.314
Depression	0.260	3.853
Anxiety	0.244	4.095
Stress	0.243	4.113
Loneliness	0.670	1.492

The multicollinearity problem arises when the Tolerance Value (TV) is less than .20 and the Variance Inflation Factor (VIF) exceeds 10 [21]. Based on the VIF and TV values calculated for the independent variables in Table 4, it was concluded that there was no multicollinearity problem among the variables.

As a result of the final analyses, it was determined that the conditions required for conducting multiple regression analysis were met. Consequently, multiple regression analysis was applied to evaluate the predictive influence of participants' loneliness, trait anger, anger expression styles, depression, anxiety, and stress on their psychological resilience.

The analysis revealed that loneliness, outward anger, anger control, stress, and anxiety significantly predicted psychological resilience (Table 5, $R = .440$, $F = 47.34$, $p < .05$), explaining 20% of the variance ($R^2 = .194$). The independent variables ranked in order of importance for predicting psychological resilience were stress ($\beta = -.204$, $p < .05$), outward anger ($\beta = .198$, $p < .05$), anxiety ($\beta = -.191$, $p < .05$), anger control ($\beta = .190$, $p < .05$), and loneliness ($\beta = -.059$, $p < .05$). Trait anger, inward anger, and depression were not significant predictors of psychological resilience ($p > .05$).

Based on the analysis (Table 6), it was observed that combat athletes' levels of anger-out, anger control, and stress are significant predictors of psychological resilience ($R = .653$, $F = 15.557$, $p < .05$), collectively accounting for 43% of the variance in psychological resilience. Upon examination of the standardized regression coefficients, it was found that stress ($\beta = -.295$, $p < .05$) is the most significant predictor, followed by anger-out ($\beta = .243$, $p < .05$) and anger control ($\beta = .172$, $p < .05$). Conversely, variables such as loneliness, trait anger, anger-in, depression, and anxiety did not demonstrate a statistically significant contribution to the prediction of psychological resilience ($p > .05$).

Based on the analysis (Table 7), it was found that anger control among team athletes significantly predicts psychological resilience ($R = .605$, $F = 7.784$, $p < .05$), accounting for 37% of the variance in psychological resilience. Examination of the

Table 5. Multiple Regression Analysis of Loneliness, Trait Anger, Anger Expression Styles, and DASS Scale in Predicting Psychological Resilience

Independent Variable	B	Std. Error	β	t	p
Fixed	24.925	1.269		19.645	.000*
Loneliness	-.059	.021	-.102	-2.867	.004*
Trait Anger	-.048	.035	-.067	-1.393	.164
Anger Directed Inward	-.082	.043	-.079	-1.890	.059
Outward Anger	.198	.046	.198	4.346	.000*
Anger Management	.190	.032	.196	5.879	.000*
Depression	-.100	.062	-.091	-1.601	.110
Anxiety	-.191	.064	-.176	-2.980	.003*
Stress	-.204	.058	-.207	-3.509	.000*
R = .440	R ² = .194	F = 47.34	*p < .05		

Table 6. Multiple Regression Analysis of the Prediction Relationship between Combat Athletes' Loneliness, Trait Anger, Anger Expression Styles, and DASS Scale's Psychological Resilience

Independent Variable	B	Std. Error	β	t	p	TV	VIF
Fixed	25.869	2.470		10.472	.000*		
Loneliness	-.051	.042	-.094	-1.212	.227	.575	1.738
Trait Anger	-.092	.071	-.123	-1.287	.200	.377	2.651
Anger Directed Inward	-.037	.090	-.035	-0.411	.682	.472	2.119
Outward Anger	.267	.095	.243	2.794	.006*	.452	2.212
Anger Management	.162	.063	.172	2.580	.011*	.774	1.292
Depression	-.097	.112	-.091	-0.867	.387	.309	3.238
Anxiety	-.211	.140	-.189	-1.502	.135	.218	4.594
Stress	-.284	.122	-.295	-2.323	.021*	.214	4.684
R = .653	R ² = .427	F = 15.557	*p < .05				

Table 7. Multiple Regression Analysis Regarding the Prediction of Loneliness, Trait Anger, Anger Expression Styles, and DASS Scale on Psychological Resilience of Team Athletes

Independent Variable	B	Std. Error	β	t	p	TV	VIF
Fixed	28.041	3.774		7.429	.000*		
Loneliness	-.088	.053	-.145	-1.664	.099	.772	1.296
Trait Anger	-.118	.102	-.158	-1.160	.249	.316	3.162
Anger Directed Inward	-.193	.141	-.172	-1.363	.176	.367	2.721
Outward Anger	.171	.118	.177	1.453	.149	.395	2.535
Anger Management	.205	.095	.193	2.143	.034*	.724	1.382
Depression	-.244	.178	-.196	-1.373	.172	.290	3.452
Anxiety	-.009	.176	-.007	-0.050	.960	.272	3.682
Stress	-.110	.185	-.101	-0.591	.556	.202	4.957
R = .605	R ² = .366	F = 7.784	*p < .05				

standardized regression coefficients revealed that anger control ($\beta = .193$, $p < .05$) is a significant predictor of psychological resilience.

However, other variables, including loneliness, trait anger, anger-in, anger-out, depression, anxiety, and stress, did not significantly predict psychological resilience ($p > .05$).

Based on the analysis (Table 8), it was determined that anger-out, anger control, anxiety, and stress significantly predict psychological resilience among physically inactive individuals ($R = .545$, $F = 25.768$, $p < .05$), collectively explaining 30% of the variance. Examination of the standardized regression coefficients revealed that the most significant

Table 8. Multiple Regression Analysis of Physical Inactive Individuals' Loneliness, Trait Anger, Anger Expression Styles, and DASS Scale's Prediction of Psychological Resilience

Independent Variable	B	Std. Error	β	t	p	TV	VIF
Fixed	23.820	1.654		14.400	.000*		
Loneliness	-.053	.028	-.090	-1.927	.055	.661	1.513
Trait Anger	-.013	.044	-.019	-0.301	.763	.366	2.730
Anger Directed Inward	-.075	.054	-.075	-1.396	.163	.505	1.978
Outward Anger	.185	.059	.189	3.128	.002*	.395	2.529
Anger Management	.189	.042	.196	4.462	.000*	.745	1.342
Depression	-.069	.085	-.064	-0.811	.418	.230	4.350
Anxiety	-.233	.083	-.219	-2.827	.005*	.239	4.176
Stress	-.186	.073	-.190	-2.552	.011*	.259	3.860
R = .545	R ² = .297	F = 25.768	*p < .05				

predictors of psychological resilience were anxiety ($\beta = -.219$, $p < .05$), stress ($\beta = -.190$, $p < .05$), anger control ($\beta = .196$, $p < .05$), and anger-out ($\beta = .189$, $p < .05$). Conversely, loneliness, trait anger, anger-in, and depression did not exhibit significant predictive power for psychological resilience ($p > .05$).

Discussion

The primary aim of this study was to examine the relationship between loneliness, trait anger, anger expression styles, and psychological resilience, as well as the predictive role of these variables on psychological resilience among athletes and physically inactive individuals.

The analysis of Table 3 highlights significant relationships between loneliness, psychological resilience, trait anger, anger expression styles, and the sub-dimensions of the Depression Anxiety Stress Scale (DASS), including depression, anxiety, and stress. These findings align with prior research indicating that social isolation reduces coping capacity, thereby linking increased loneliness to lower resilience and heightened vulnerability to depression and anxiety [14, 22], and complement them. High levels of trait anger, often associated with poorer mental health and elevated stress, further underscore the role of maladaptive anger management in emotional dysregulation [23]. In contrast, effective anger control has been shown to buffer against stress and depression, consistent with findings that emotional regulation plays a critical role in supporting resilience [24].

The findings in Table 4 confirm that multicollinearity, a condition where predictors are highly intercorrelated, is not present in this study. This was verified using Variance Inflation Factor (VIF) and Tolerance Value (TV) metrics, which fell within acceptable limits [21, 25]. Our results align well with and expand upon previous research indicating that predictors such as loneliness, trait anger, anger expression styles, depression, anxiety,

and stress significantly impact resilience either as risk or protective factors, depending on how emotions are managed [26, 27]. The absence of multicollinearity ensures that the unique influence of each predictor on resilience can be reliably assessed. The findings further emphasize the importance of emotional regulation strategies and social support in enhancing resilience, particularly for individuals experiencing loneliness or emotional distress.

The findings in Table 5 demonstrate that loneliness, anger out, anger control, stress, and anxiety collectively explain 20% of the variance in psychological resilience ($R = .545$, $F = 25.768$, $p < .05$). Stress ($\beta = -.204$, $p < .05$) and anxiety ($\beta = -.191$, $p < .05$) were negatively associated with resilience, supporting research that stress depletes cognitive resources and anxiety impairs decision-making and adaptation [26, 27, 28]. In contrast, anger control ($\beta = .190$, $p < .05$) and anger out ($\beta = .198$, $p < .05$) positively predicted resilience, aligning with findings that anger regulation reduces impulsivity and fosters thoughtful coping, while expressing anger outwardly may help release tension and build social support [24, 29, 30]. Loneliness ($\beta = -.059$, $p < .05$) showed a modest negative effect on resilience, consistent with evidence that social isolation undermines psychological well-being [22]. Trait anger, anger in, and depression did not significantly predict resilience ($p > .05$), indicating that situational coping mechanisms such as emotional regulation and stress management play a more critical role than general emotional states.

The findings in Table 6 show that stress, anger out, and anger control significantly predict psychological resilience among combat athletes, collectively explaining 43% of the variance ($R = .653$, $F = 15.557$, $p < .05$). Stress ($\beta = -.295$, $p < .05$) emerged as the strongest predictor, aligning with research indicating that elevated stress impairs resilience by depleting cognitive resources and

emotional stability [28]. Anger out ($\beta = -.243$, $p < .05$) negatively impacted resilience, contrasting with studies on non-athletic populations where expressing anger outwardly may reduce stress [24]. In combat athletes, externalized anger may disrupt focus and hinder coping strategies in high-stakes environments [31]. Conversely, anger control ($\beta = .172$, $p < .05$) was positively associated with resilience, consistent with evidence that effective emotional regulation reduces impulsivity and enhances stability, which are critical in competitive settings [30]. Other variables, including loneliness, trait anger, anger in, depression, and anxiety, did not significantly predict resilience ($p > .05$), suggesting that resilience in combat athletes relies more on situational coping mechanisms like stress management and anger regulation than on baseline emotional states [32].

The findings in Table 7 demonstrate that anger control is a significant predictor of psychological resilience among team athletes, explaining 37% of the variance in resilience scores ($R = .605$, $F = 7.784$, $p < .05$). A positive standardized regression coefficient ($\beta = .193$, $p < .05$) suggests that athletes with better anger control exhibit greater resilience, consistent with research highlighting emotional regulation, particularly anger management, as a crucial factor in resilience development, especially in high-pressure team environments [30]. Anger control appears essential in team sports, where effective collaboration and interpersonal interactions are critical; athletes who manage anger constructively are less likely to exhibit impulsive behavior or engage in conflicts, thereby enhancing both resilience and team dynamics [33]. Other variables, including loneliness, trait anger, anger in, anger out, depression, anxiety, and stress, did not significantly predict resilience ($p > .05$). This suggests that resilience among team athletes is influenced more by situational coping mechanisms, such as anger regulation, than by general mood states or personality traits. These findings align with research emphasizing the importance of regulating and expressing emotions in performance settings rather than relying on baseline emotional characteristics [32].

The findings in Table 8 show that anxiety, stress, anger control, and anger out significantly predict psychological resilience among physically inactive individuals, collectively accounting for 30% of the variance ($R = .545$, $F = 25.768$, $p < .05$). Anxiety ($\beta = -.219$, $p < .05$) and stress ($\beta = -.190$, $p < .05$) negatively impacted resilience, consistent with research indicating that anxiety fosters cognitive distortions and avoidant behaviors, while stress depletes coping resources and impairs adaptability [27, 28]. In contrast, anger control ($\beta = .196$, $p < .05$) and anger out ($\beta = .189$, $p < .05$) positively predicted resilience, aligning with evidence that emotional

regulation, particularly anger management, supports psychological stability by reducing impulsive reactions and facilitating constructive coping [24, 30]. For physically inactive individuals, who may lack active outlets for stress, managing anger constructively or expressing it outwardly may mitigate internal tension and enhance resilience. Meanwhile, loneliness, trait anger, anger in, and depression did not significantly predict resilience ($p > .05$), indicating that situational coping mechanisms, such as stress and anger regulation, are more critical for resilience in this population than baseline emotional states [26].

The analysis across tables demonstrates that psychological resilience is influenced by situational factors such as stress, anxiety, and anger regulation rather than by baseline emotional states like loneliness or depression. Stress and anxiety consistently showed a negative relationship with resilience, highlighting their role in depleting coping resources and hindering adaptability. Conversely, anger control emerged as a positive predictor across groups, reflecting the role of emotional regulation in fostering stability and effective coping. Variations in predictors between groups, such as the significance of anger out in physically inactive individuals, suggest that resilience strategies should be tailored to specific contexts and population needs.

Study Limitations

This study has several limitations that should be acknowledged. First, the reliance on self-reported measures may introduce response biases, as participants might overestimate or underestimate their emotional states and coping abilities. Second, the cross-sectional design limits the ability to infer causality between the predictors and psychological resilience. Longitudinal studies are needed to explore how changes in emotional regulation and stress levels over time influence resilience. Third, the sample primarily consisted of athletes and physically inactive individuals within a specific cultural context, which may limit the generalizability of the findings to other populations or settings.

Future research could address these limitations by incorporating objective measures of emotional regulation and stress, as well as employing experimental or longitudinal designs to establish causality. Comparative studies across diverse cultural and demographic groups may also provide deeper insights into the universality or variability of resilience predictors. Additionally, exploring the role of other potential factors, such as social support networks, personality traits, and lifestyle habits, could further enrich the understanding of resilience mechanisms and inform targeted interventions.

Conclusions

The findings of this study provide insights into the complex interplay between emotional regulation,

stress management, and psychological resilience. The predictors of resilience differ across groups, emphasizing the need for tailored strategies to address the specific challenges faced by athletes and physically inactive individuals. The results highlight the importance of fostering situational coping mechanisms, such as effective anger regulation and stress management, rather than focusing solely on baseline emotional traits. Interventions aimed at

enhancing resilience should consider the unique needs of different populations and prioritize skills that promote adaptability and emotional stability in response to external stressors.

Conflict of interests

The author declare that there is no conflict of interests.

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