

Investigation of The Relationship Between Athletes' Psychological Resilience, Emotional Reactivity, Psychological Maladjustment and Trait Anger Control

Investigación de la relación entre la resiliencia psicológica, la reactividad emocional, la inadaptación psicológica y el control de la ira de los atletas

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Abstract. The purpose of the research is to examine the relationship between athletes' psychological resilience, emotional reactivity, psychological maladjustment and trait anger levels and the mediating role of psychological resilience in this relationship. The data were obtained from a total of 972 athletes, 298 women and 674 men, in different sports branches (boxing, wrestling, taekwondo, athletics, soccer, volleyball, handball, basketball). In the data collection process, the emotional reactivity scale adapted to Turkish culture, the depression, anxiety, stress scale, the anger and expression style scale and the short psychological resilience scale were used. In the analysis of the data, the structural equation model was used to determine the direct and indirect predictive effects between variables. In line with the findings, although emotional reactivity in athletes exerts pressure on psychological maladjustment (depression, anxiety, and stress), psychological resilience has a protective function. It can be said that athletes with high psychological resilience may be in a more positive position in terms of showing trait anger and psychological maladjustment, whereas athletes with low psychological resilience may be in a disadvantageous position. The results of the study revealed that emotional reactivity has a positive predictor of depression, anxiety, and trait anger. On the other hand, psychological resilience was evaluated to have a strong protective function on emotional reactivity, psychological maladjustment and trait anger among athletes, and this finding was discussed in the context of the literature.

Keywords: Athlete, Psychological resilience, Emotional reactivity, Psychological maladjustment, Trait anger control

Resumen. El propósito de la investigación es examinar la relación entre la resiliencia psicológica, la reactividad emocional, la inadaptación psicológica y los niveles de ira del rasgo de los atletas y el papel mediador de la resiliencia psicológica en esta relación. Los datos se obtuvieron de un total de 972 deportistas, 298 mujeres y 674 hombres, de diferentes ramas deportivas (boxeo, lucha libre, taekwondo, atletismo, fútbol, voleibol, balonmano, baloncesto). En el proceso de recogida de datos se utilizó la escala de reactividad emocional adaptada a la cultura turca, la escala de depresión, ansiedad, estrés, la escala de estilo de ira y expresión y la escala corta de resiliencia psicológica. En el análisis de los datos se utilizó el modelo de ecuaciones estructurales para determinar los efectos predictivos directos e indirectos entre variables. De acuerdo con los hallazgos, aunque la reactividad emocional en los atletas ejerce presión sobre la inadaptación psicológica (depresión, ansiedad y estrés), la resiliencia psicológica tiene una función protectora. Se puede decir que los atletas con alta resiliencia psicológica pueden estar en una posición más positiva en términos de mostrar un rasgo de ira y desajuste psicológico, mientras que los atletas con baja resiliencia psicológica pueden estar en una posición desventajosa. Los resultados del estudio revelaron que la reactividad emocional tiene un predictor positivo de depresión, ansiedad y rasgo de ira. Por otro lado, se evaluó que la resiliencia psicológica tiene una fuerte función protectora sobre la reactividad emocional, la inadaptación psicológica y el rasgo de ira entre los atletas, y este hallazgo se discutió en el contexto de la literatura.

Palabras clave: deportista, resiliencia psicológica, reactividad emocional, inadaptación psicológica, rasgo de control de la ira.

Introduction

Psychological resilience has become a current research and application area in sports and exercise psychology in recent years. Although psychological resilience has been widely studied in different areas of psychology, researchers began to investigate this structure in the field of sports only at the beginning of the 21st century (Fletcher and Sarkar, 2012; Galli et al., 2008; Machida et al., 2013; Morgan et al., 2013). Although psychological resilience is similar to other structures such as coping and mental

toughness, it is unique in terms of expressing resilience, coping with difficulties, and positive adaptation conditions (Galli et al., 2015).. Even though mental toughness refers to a set of psychological characteristics central to optimal performance, (Live et al., 2019) an athlete's psychological toughness; It defines how to use and optimize skills to meet challenges for successful performance (Sarkar and Fletcher, 2015) Facing stressful events is essential for a successful performance. Being psychologically resilient also means recognizing and accepting one's limits and having the power to look beyond adversities optimistically (Fletcher and Sarkar, 2016; Galli et al., 2015). Psychological resilience is important in sports because athletes must constantly withstand a wide variety of pressures to achieve and maintain high performance (Sarkar and Flet-

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cher, 2014). Studies reveal that psychological resilience plays an important role in coping with and alleviating stress, which is accepted as a determinant of success in sports (Nicholls et al., 2008; Codonhato et al., 2018). Many studies in the field of sports claim that the athletes' psychological resilience is positively associated with resilience and optimism, and negatively associated with stress and burnout (Codonhato et al., 2018; Galli and Gonzalez, 2015; Wagstaff et al., 2018). Resilience is predominantly characterized as a state-like concept in which individuals continually improve their regulatory responses and monitor their perceptions of themselves, their available resources, and their environment through ongoing interactions with various stressors (Sarkar and Fletcher, 2014). This situation was considered as a collection of personal characteristics, including traits such as optimistic thinking, and led to a consensus that mental resilience is a multi-dimensional concept (Butt et al., 2010; Jones, 2002). (Fourie and Potgieter, 2001) stated that the athletes with high mental and psychological resilience showed positive performance by managing stress and pressure during tough competition, feeling in charge of the competition condition and performance outcomes, responding favorably to pressures and obstacles in sports competitions, witnessing their losses and shortcomings, handling their feelings, and quickly overcoming negative experiences during training, competition, and after the match.

Psychological resilience appears as a structure that affects and is affected by many factors. Emotional reactivity, psychological maladjustment (anxiety, depression, and stress), and anger control, which are among the main themes of this study, are considered to have networks with psychological resilience. One of the most important goals of this study is to reveal the predictive power of psychological resilience between depression, anxiety, stress, trait anger, which negatively affects athletes, and the emotional loneliness that triggers these situations. (Nock et al., 2008) states that emotional reactivity expresses the emotions experienced in the face of situations that arise in an individual's interpersonal relationships, the intensity of these emotions, and the reactions revealed. Emotional reactivity can present explanatory data to field workers in the causality analysis of human behaviour and while trying to explain behavioural differences (Nock et al., 2008; Secer et al., 2013). When the studies on emotional reactivity were examined, studies were found to examine the relationship between emotional reactivity and depression and anxiety (Cengiz, 2017). It is also emphasized that irritability, which is one of the markers of situational anger, is a common symptom of major depression. (Parneix et al., 2014). Emotional reactivity can present explanatory data to field workers in the causality analysis of human behavior and while trying to explain be-

havioral differences. The emotional reactions that people show or may show to the events, situations, people they encounter during their lives can also change. If people's positive emotional reactions are high, while love, respect and personal confidence increase; If negative emotional reactions are high, feelings of aggression, fear, anxiety and suicide may increase (Wentzel, 1998). Determining the predictive power of emotional reactivity on psychological maladjustment and trait anger will contribute to the mental health and performance of athletes.

For athletes, emotions constitute an important component of sports activity, as they mainly determine the stimulation during competition. Because sports are competitive, athletes must exert maximum effort against the mental stress and great physical fatigue that accompany them. This process consists mainly of a series of directed and organized activities that depend on cognitive functioning (Bali, 2015; Kolayis and Sari, 2011). Therefore, psychological resilience may be the source of the elimination of risky behaviours that emotional reactivity can create in athletes.

Another feature that may be associated with psychological resilience is psychological maladjustment. Psychological maladjustment can be defined as a state of negativity representing components such as anxiety, depression, and stress (Secer, 2015). It is thought that a high level of psychological resilience can protect the individual against adversities and can be an important construct in displaying a successful sportive performance (Bull et al., 2005; Gucciardi et al., 2018). Therefore, psychological resilience emerges as an important concept in the management of stress processes. Apart from being considered a means of active recreation, various sports activities are also an important way of coping with stress and avoiding certain psychological issues such as depression and anxiety disorders (Lau WC and Lau EY, 2009; Schaal et al., 2011). Studies emphasize that people who exercise and do regular physical activity have low levels of depression and anxiety, and they are stronger in terms of coping with stress and resilience (Chekroud et al., 2018; Greco et al., 2019; Johnson, 2015; Rosenbaum et al., 2014; Vancampfort et al., 2017; Zuleta et al., 2022). However, since sports are based on the priority of winning, they cause risk factors such as stress, emotional intensity, problems, and injuries arising from personality traits (Devonport et al., 2005; Kolayis and Sari, 2011; Sterkowicz et al., 2012; Wilson, 2011), career dissatisfaction, sports injury, and anxiety caused by the feeling of negativity in reaching goals (Kilic et al., 2017; Hussey et al., 2019; Rice et al., 2019;). Therefore, to control and manage the anxiety, tension, and stress levels of athletes, various interventional strategies and techniques designed in a versatile way by combining physical and psychological training should be applied (Bali, 2015; Sterkowicz, 2019).

(Novaco et al., 1986) sees anger as an emotional stress response that occurs after frustration. In this view, the emotional state of anger is the result of experienced physiological arousal and its cognitive interpretation. Thus, anger as a multidimensional structure is associated with cognitive distortions such as misvaluations and accusations, physiological changes such as hypertension and facial expressions, behavioural responses such as verbal/behavioural anger expression strategies (Kassinove, Sukhodolsky, 1997). There are two types of anger; these are trait and situational anger. Trait anger can be defined as the continuation of anger behaviour.

Anger is a common emotion with important functional properties, including signaling the occurrence of harmful or unjust events. However, frequent and intense experiences of anger can have pathophysiological consequences for health (Lupis et al. 2014). Anger is a common emotion in sports and athletes participating in physical contact sports often interpret their competitive anger as beneficial to sports performance. Athletes see anger as helping to activate behaviour. In the field of sports psychology, both anecdotal and scientific evidence convincingly rejects anger as an effective way of promoting exemplary athletic performance. On the contrary, experts glorify the controlled and self-regulated athlete (Hanson and Ravizza, 1995; Orlick, 1990).

The Current Study

The purpose of this research is to examine the relationship between athletes' emotional reactivity, psychological resilience, psychological maladjustment and, trait anger levels. In this way, it is thought that it can contribute to the expansion of our perspective regarding the variables and processes that affect the mental health processes of athletes. For this purpose, answers to the questions given below were sought.

1. What is the predictive effect of emotional reactivity on psychological maladjustment and trait anger in athletes?
2. What is the mediating role of psychological resilience in the relationship between emotional reactivity, psychological maladjustment, and trait anger in athletes?

Materials and Methods

Participants

All athletes were informed and consented to be included before participating in the study. The study was carried out in accordance with the Declaration of Helsinki and was approved by the Ethics Committee of Ataturk University Faculty of Sport Sciences (70400699-050.02.04-E.2100083856). The online data collection process was

used to reach the participants. The online survey took approximately 10 minutes to complete and all surveys were completed within 30 days. Descriptive information about the participants of the study is presented in Table 1.

Table 1. Descriptive statistics regarding some demographic characteristics of the research group

Gender	N	%	International Athlete	N	%
Female	298	30.6	Yes	290	29.8
Male	674	69.3	No	682	70.1
Education Status	International Degree				
High School	525	54.0	Yes	219	22.5
Undergraduate	393	40.4	No	753	77.4
Graduate	54	5.5	The Best International Degree		
Monthly Income (TL)	International Tournament				
550<	304	31.2	International	7	0.7
			Mediterranean Games		
551- 1500	188	19.3	European Championship	43	4.4
1501- 3000	189	19.4	World Championship	36	3.7
3001- 4500	106	10.9	Total	219	22.5
4501- 6000	107	11.0	Sports Age (yıl)		
6001>	78	8.0	4<	272	28.0
Branch	5-8				
Boxing	139	14.3	9-12	175	18.0
Wrestling	129	13.3	13>	217	22.3
Taekwondo	131	13.5	Age		
Athletics	130	13.4	18<	472	48.5
Soccer	134	13.8	19-23	260	26.7
Volleyball	107	11.0	24-28	126	12.9
Hentball	111	11.4	29>	114	11.7
Basketball	91	9.4			
TOTAL				972	100

Data Collection Tools Used

Emotional Reactivity Scale

The Emotional reactivity Scale is a 4-point Likert-type measurement tool based on the self-report developed by (Nock et al., 2008). The scale consists of 17 items and three sub-dimensions. Adaptation of the scale into Turkish is done by (Secer et al., 2013). Validity results regarding the adaptation showed that the scale preserved its factor structure in its original form ($\chi^2 = 1.40$, RMSEA=.066, NFI=.90, CFI=.94). The reliability coefficient of the scale is determined as .91. The scores that can be obtained from the emotional reactivity scale range between 17 and 68, and high scores indicate a negative situation in terms of emotional reactivity.

Brief Psychological Resilience Scale

Brief Psychological Resilience Scale is a 5-point Likert-type measurement tool developed by Smith et al. (Smith et al., 2008) and adapted to Turkish culture by Dogan (Dogan, 2015). The scale consists of six items and one dimension. Findings regarding the construct validity of the scale ($\chi^2/SD=1.96$; REMSEA=0.062, RMR=0.063, SRMR=0.067, CFI=0.98) and the findings related to internal consistency indicate the adequacy of the psychomet-

ric properties of the Cronbach alpha=0.91. The scores that can be obtained from the scale range from 6 to 24, and high scores indicate a positive level of psychological resilience.

Depression, Anxiety, Stress Scale (DASS)

Depression Anxiety Stress Scale is a 4-point Likert-type measurement tool developed by PF Lovibond and SH Lovibond (Lovibond PF and Lovibond SH, 1995) and was revised into 21 items by (Trevino et al. 2015). Adaptation of the scale to Turkish is done by (Yilmaz et al., 2017). Data on the construct validity of the scale ($\chi^2/SD=2.84$; REMSEA=0.051, RMR=0.036, CFI=0.98) showed that the three-factor structure consisting of 21 items has a good level of fit and the internal consistency coefficient Cronbach's alpha=0.79 was sufficient. Scores that can be obtained from the scale range from 21 to 84, and high scores indicate high levels of depression, anxiety, and stress symptoms.

Trait Anger and Expression Style Scale

The Trait Anger and Anger Expression Scale was developed by (Spielberger et al., 1983) and the scale was adapted to Turkish by (Ozer, 1994). The scale, which has four subscales, is evaluated with the four-point Likert technique and consists of 34 items and three sub-dimensions in total. These sub-dimensions are; Anger-In, Anger-Out, and Anger-Control subscales. The scores obtained from each of the sub-dimensions are interpreted within themselves.

Data Analysis and Process

The research started with the approval of the Ethics Committee of Ataturk University Faculty of Sport Sciences. Since the athletes reside in different provinces, online resources were used during the data collection process. In this context, the online data collection link prepared via Google Docs (available from <https://forms.gle/IN5ZnMlTRba2Tpx9>) has been delivered to the athletes through applications such as e-mail and WhatsApp. In this context, athletes were reached and additional explanations about volunteering and data privacy were added to the online data collection link. Besides, the information that they can withdraw from the questionnaire filling process at any time has been added. The online data collection process was completed within 30 days. Data collection and compilation procedures were carried out by four researchers with expertise in sports sciences and psychology. Since the data collection process is online, there is no lost data.

In this study, the maximum likelihood method and the structural equation model for implicit variables were used. During the research process, data were collected from 972 people. For extreme value analysis on the data, skewness and kurtosis values were examined and it was decided to extract the data of 24 individuals by determining that they

had extreme values. In addition, Mahalanobis values were calculated for multivariate normality analysis and data of 11 people were extracted from the data set. After the sorting process, normality values were examined with Histogram, Kolmogorov-Smirnov analyzes on the data of 940 people and it was determined that the data set showed normal and homogeneous distribution. After the parametric properties of the data set were determined, the analyzes were carried out with implicit variable structural equation modeling. To find answers to the research questions, structural equation analyzes were carried out with the LISREL 9.2 package program. In this context, the confirmatory measurement model was tested to examine the fit of the model constructed in the preliminary stage of the analysis and it was determined that all implicit variables have a good level of fit with the indicator variables they represent and other implicit variables ($\chi^2/df=1.80$; REMSEA: .062, RMR: .063, SRMR: .063, NFI: .96, CFI= .97) (Tabachnick et al., 2007). After the validation of the measurement model, Two different models formed in the context of research questions were tested with the structural equation model. The values CFI, NFI, GFI, RMR, SRMR, RMSEA, and χ^2 , which are the fit indices frequently used in the structural equation model, have been examined. In the evaluation of the model fit indices, different criteria were taken into account as suggested. In this context, (Schumacker and Lomax, 2004) argue that the model fit indices for RFI, TLI, CFI, NFI, NNFI, and IFI should be, for acceptable fit, «».90, and for the perfect fit «».95, for acceptable fit for GFI and AGFI «».85 and for the perfect fit it should be «».90 and acceptable fit for RMR, REMSEA AND SRMR d» .08 and for the perfect fit d» .50.

Results

In this section, the findings resulting from the analysis of the sub-problems of the research are included. Two different models were tested in the Structural Equation Model to examine the direct and indirect relationships between emotional reactivity, psychological maladjustment and trait anger of sports people and the mediating role of psychological resilience in this relationship pattern. The findings of these models will be examined under separate headings.

Model 1. The predictive effect of emotional reactivity on psychological maladjustment and trait anger in sports people

Two different models were tested for the purposes of the research. In this context, firstly, as Model 1, the research hypothesis designed as ; « *Emotional reactivity is a significant predictor of psychological maladjustment and trait anger in athletes* » was tested. Findings related to Model 1 are presented in Figure 1.

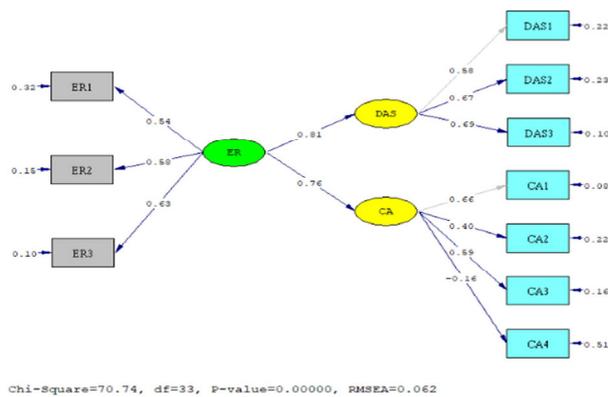


Figure 1. Standardized values for Model 1.

When fit index values for the model tested in Figure 1; $\chi^2 (70.74/33) = 2.14$; $CFI = .96$; $TLI = .97$; $NFI = .97$; $GFI = .95$) considered, it can be said that all of the implicit variables in Model 1 have a significant relationship with the observed variables ($p < 0.001$) they represent. In addition, emotional reactivity has a positive predictor on psychological maladjustment ($\beta = .81$, $p < .01$, 66%) and on trait anger ($\beta = .76$, $p < .01$, 57%). This finding can be evaluated as emotional reactivity has a strong effect on psychological maladjustment and trait anger in athletes. In the model tested in Model 1, the psychological resilience variable was added in line with the research hypothesis, and the mediator role of psychological resilience and the change in the relationship coefficients between the variables were examined.

Model 2. Direct and Indirect Predictive Effects of Emotional Reactivity on Psychological Maladjustment and Trait Anger in Athletes and the Mediating Role of Psychological Resilience

To better understand the predictive coefficients between variables in structural equation models, it is recommended to examine the mediation relationships by including other possible variables in the model. Depending on the verification of the tested hypothesis in Model 1, the psychological resilience variable was included in the relevant model, and in this model, the predictive effect of emotional reactivity was tested directly on psychological maladjustment and trait anger, and indirectly on the psychological resilience variable, and mediating relationships were examined. In this context, Model 2 can be expressed as: *How did the relationship between emotional reactivity and psychological maladjustment and trait anger change after the inclusion of the psychological resilience variable in the model?* And the findings obtained are presented in Figure 2.

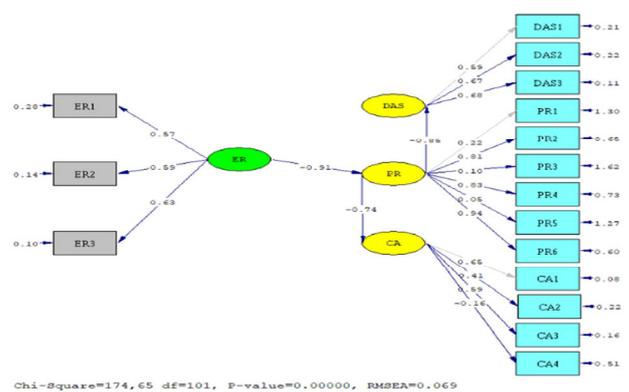


Figure 2. Standardized values for Model 2.

In Model 2, in the model designed to examine the mediating role of psychological resilience in the relationship between emotional reactivity and psychological maladjustment and trait anger, the path coefficients between emotional reactivity and psychological maladjustment and emotional reactivity and trait anger became statistically insignificant after the addition of psychological resilience to the model. Therefore, the full mediating role of psychological resilience was tested as an alternative model for this situation, which points to the mediating role of psychological resilience. As seen in Figure 2, psychological resilience fully mediates the relationship between emotional reactivity and psychological maladjustment and trait anger. Accordingly, emotional reactivity predicts psychological maladjustment and trait anger through psychological resilience. When the predictive coefficients are examined, emotional reactivity negatively predicts psychological resilience ($\beta = -.91$, $p < .01$, 82%), psychological resilience negatively predicts psychological maladjustment ($\beta = -.85$, $p < .01$, 68%) and trait anger ($\beta = -.74$, $p < .01$, 54%).

In line with the findings, although emotional reactivity in athletes exerts pressure on psychological maladjustment (depression, anxiety, and stress), psychological resilience has a protective function. It can be said that athletes with high psychological resilience may be in a more positive position in terms of showing trait anger and psychological maladjustment, whereas athletes with low psychological resilience may be in a disadvantageous position.

Discussion

The original aspect of this research is that in addition to the direct effect of emotional reactivity of the athletes on psychological adaptation skills and trait anger, it was designed considering the mediating role of athletes' psychological resilience in the relationship between emotional

reactivity and psychological maladjustment and trait anger, and discussed based on these two models.

In the research, different models were constructed in line with the structural equation model. In the first model constructed (Model 1), it was determined that emotional reactivity had a positive predictive effect on psychological maladjustment and trait anger. Several different theoretical models have emphasized the importance of both emotional regulation and emotional reactivity in the development and maintenance of psychopathology, but less attention has been paid to emotional reactivity and few studies have been conducted (Nock et al., 2008). We consider it important that our study reveals the predictive effect of emotional reactivity on other psychological factors, especially in athletes. (Secer et al., 2016) stated that emotions are important qualities that affect human life, and they stated that emotional reactivity may be the basis of many psychological disorders such as depression, anxiety disorders, and mood disorders. Besides, (Cengiz, 2017) stated that emotional reactivity is an important source of risk for adolescents experiencing depression and anxiety, based on the determination that emotional reactivity is also a positive and high-level predictor for depression-anxiety. It was revealed that emotional reactivity is in a moderately positive relationship with perceived stress, depression and trait anxiety (Hanlmoğlu & Akbaş, 2018). Therefore, young athletes need to avoid or minimize these risk factors for a successful sportive performance. The feature that has proven to play an important role in choosing a sports discipline is emotional reactivity. Studies have shown that low reactivity facilitates better compliance in extreme situations (Eliasz, 1981; Gracz, 2007). In our study, considering the positive relationship of emotional reactivity on psychological maladjustment and trait anger, which are undesirable features for a successful performance, it is thought that a low level of emotional reactivity will contribute to the success of athletes. High levels of psychological resilience in both team and individual sports are associated with lower emotional depression, anxiety, stress, and other poor mental health indicators (Drew and Matthews, 2019; Hu et al., 2015; McGarry et al., 2013). In the world of sports, athletes and coaches consider competition-related emotions, stress, and performance anxiety as important factors that can affect the outcome of a sports competition (Palazzolo, 2020). In addition, (Martin et al. 2022) emphasized that gamified physical education lesson is important in reducing students' anxiety levels. In our study, stress, which has a positive relationship with emotional reactivity, is generally associated with individuals who exhibit anxious, irritable, over-sensitive, nervous, unfocused, or depressive behaviours (Asztalos et al., 2012). This situation can have a negative effect on athletes who are unable to deal with stress or develop de-

fense mechanisms against stress. Likewise, although anger, which is one of the emotions that pose a risk for athletes, is a natural feeling; for an athlete, when it is controlled, it causes an increase in success, when it cannot be controlled and is continuous, it causes irreparable events and failure (Karagün and Caglayan, 2014). On the other hand, external factors can easily affect the emotional behaviour of athletes. In an exemplary study, it is stated that Italian athletes had an increase in perceived stress and dysfunction during the pandemic compared to before the pandemic (Di Fronso et al., 2020)., In another study, Marholz et al. (2022) stated that professional football players showed an average level of trait anxiety and a good level of general well-being during the covid 19 process. In these cases, taking measures to protect the psychological resilience of the athletes can help them to maintain their sportive performance and success level.

The results of Model 2, another model of the study, reveal that emotional reactivity in athletes exerts pressure on psychological maladjustment (depression, anxiety, and stress) and trait anger, however, psychological resilience has protective functionality. It can be said that athletes with high psychological resilience may be in a more positive position in terms of showing trait anger and psychological maladjustment, whereas athletes with low psychological resilience may be in a disadvantageous position.

The extent and increase of psychological resilience play a positive role in response to the stress and distress that athletes have to overcome (Wu et al., 2021). The findings of the study are in line with that theorists claim that mental resilience is vital for emotional control (Clough and Earle, 2002; Loehr, 1985). Athletes with high psychological resilience may exert more effective control over negative emotions (Crust and Clough, 2005), but the role of athletes in coping with negative emotions that affect their performance, gender, and their sports branch, as well as their physical, physiological, and individual differences, should not be overlooked. D Connaughton et al. (Connaughton et al, 2008) stated that mental toughness, which shows similar characteristics with psychological resilience in sports with age and experience, is directly proportional, and that older athletes have higher mental toughness than young athletes.

Another study revealed that the psychological resilience of elite weightlifting athletes is higher than non-elite weightlifters (Elemiri et al., 2014). (Wagstaff et al., 2018) show that the relationship between organizational stressor frequency and burnout is significantly reduced in athletes with higher levels of psychological resilience compared to those with lower psychological resilience levels. This result supports the research hypothesis that psychological resilience has a protective role in the emergence of negative emotions and threats to mental health in athletes.

The stressful nature of sports and sports competitions increases the importance of formal and informal training programs that will increase psychological resilience. To be successful, the athlete must be determined, dedicated, motivated, mentally resilient, and be able to rationally pursue success goals. All these qualities can be developed using psychological skills (Bertollo et al., 2009), therefore, the research can contribute to the recognition of these characteristics of athletes and improve their psychological resilience to cope with the feelings and thoughts that cause failure.

Conclusion and recommendations

One of the most important results of this study is the mediating role of resilience. Because psychological resilience functions as a mechanism that curbs the negative pressure of emotional reactivity on psychological maladjustment and trait anger. This situation reduces the level of activism of emotions that prevent athletes from performing higher and achieving better success.

Our findings add to the existing literature that resilience may be a protective factor for psychological maladjustment and trait anger in athletes. As a result, sports psychology counsellors, trainers, education experts, and parents should collaborate and act based on scientific evidence to eliminate or minimize the factors that limit athletes' sports performance. Knowing the athletes' current physical, physiological, and psychological characteristics, enhancing their positive characteristics, and devising strategies to deal with their negative characteristics would help them compete at their best both before and during competitions.

Finally, this research was conducted with the online data collection process due to the pandemic process. It should be considered that online processes can have an impact on the participants' motivation when it comes to interpreting the findings. However, it is thought that planning and conducting longitudinal studies can contribute to the widening of the perspective of determining the variables including protective and risk factors on the mental health processes of athletes.

Ethics Statement

The study was carried out in accordance with the Declaration of Helsinki and was approved by the Ethics Committee of xxx University xxxx of xxxxx (70400699-050.02.04-E.2100083856).

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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