Int. J. Sport Psychol., 2025; 56: 551-573
doi: 10.7352/IJSP.2025.56.551

# The impact of self-criticism and teammate criticism in sport competition on collegiate athletes' mental health

***Linnea Bacon*[1] *and Brad Donohue***

*Department of Psychology, University of Nevada, Las Vegas, USA*

*Extant studies have examined the impact of criticism on psychiatric symptomology in athletes. Further, the direct impact of criticism on athletes' mental health has yet to be explored while considering sociocultural factors. The current study sought to examine the influence of self-criticism and teammate-criticism during training and competition on psychiatric symptoms in 131 NCAA athletes. Participants were administered the Sport Interference Checklist (SIC; Donohue et al., 2007) to examine criticism of self and teammates during competition and the Symptom Checklist-90-Revised (SCL-90-R; Derogatis, 1994) to examine severity of psychiatric symptoms. Linear Regression showed increased self-criticism ($p < .001$) and criticism of teammates ($p < .05$) predicted increased severity of psychopathology. Moderation analyses examining ethnicity suggested psychiatric symptoms in athletes of the global majority are more negatively impacted by self-criticism than White athletes. Gender and age did not moderate the relationship between criticism and psychiatric symptoms.*

KEY WORDS: Self-criticism, Criticism of Teammates, Psychopathology, Ethnicity, Gender.

Athlete mental health is a predominate concern in the sports community due to a number of factors, including performance pressures during competition (Chang et al., 2020; Reardon et al., 2019), and related time demands balancing sport training and academics (Saw et al., 2016). To assist sport-specific intervention development it is important to understand factors that may contribute to mental health related outcomes in collegiate athletes (Küttel & Larsen, 2020), such as self-criticism and criticism of others. For instance, self-criticism is a predominate concern during sport competition (Ferguson et al., 2014), particularly when stress is high (McIntyre et al., 2018); and in sport competition self-criticism has been negatively associated with goal progress and motivation in athletes (Powers et al., 2009). Athletes who exhibit high rates of self-criticism evidence relatively severe negative affect (Powers et al., 2009). Although there appears to be a positive relationship between self-crit-

*Correspondence to: Linnea Bacon Email: linnea.bacon@unlv.edu*

icism and psychiatric symptoms in the general population (Werner et al., 2019), the potential link between criticism and general psychiatric symptoms has yet to be explored within the context of collegiate sports competition.

## Self-Criticism And Criticism of Teammates

Self-criticism varies in how it has been delineated in the literature. Zaccari et al. (2024) define self-criticism as the tendency to negatively judge one's thoughts, actions, and personal attributes, often through negative self-judgement, self-evaluation, and self-talk. Shahar et al. (2015) describe self-criticism as a self-evaluative process where one judges themselves in a negative way. Although the literature posits self-criticism as a mostly negative evaluative process, Kannan and Levitt (2013) position it on a continuum of healthy to maladaptive, characterizing self-criticism as an evaluation of oneself that can be a healthy and reflexive behavior but also can have harmful consequences. While self-criticism is described as a mostly internal process, criticism of teammates is depicted by Boardley and Jackson (2012) as an example of antisocial teammate behavior, defined as voluntary acts intended to disadvantage another individual or teammate. Raver et al. (2012) depicts criticism of others on a spectrum, including both destructive and constructive criticism, where negative feedback can be delivered in both a considerate (constructive) and inconsiderate (destructive) style. These definitions indicate that both self-criticism and criticism of others can be either detrimental or beneficial to the athlete, depending on the use. In this study, the specific measures of self-criticism and criticism of teammates were derived from the Sport Interference Checklist (SIC; Donohue et al., 2007), which elicits how often self-criticism and being too critical of teammates has interfered with an athlete's sports performance in training and competition.

## Self-Criticism and Mental Health

The relationship between self-criticism and mental health associated factors appears to be relatively consistent across the globe. For instance, in Canadian female athletes, Ferguson et al. (2022) determined that self-criticism decreased factors associated with psychological flourishing during sport activities, such as lower levels of environmental mastery, positive relatedness, and self-acceptance. Shanmugam and Davies (2015) found self-critical perfectionism predicted symptoms that were related to eating disorders in competitive collegiate athletes from the United Kingdom, and self-criticism was

negatively associated with mental toughness in an ethnically diverse group of competitive tennis players in South Africa (Cowden et al., 2018). In Portuguese teenage athletes, self-criticism was associated with lower levels of performance, psychological well-being, and connection among teammates (Oliveira, et al., 2022), while Oliveira et al. (2023) found self-criticism may be a maladaptive coping strategy associated with symptoms of depression and poor psychological health. Self-criticism has also been negatively associated with goal progress and motivation as well as predictive of negative affect in university athlete samples (Powers et al., 2009; Powers et al., 2011). Self-criticism seems to be an important correlate of anxiety in athlete samples, particularly as it has been associated with increased levels of competitive state and sport anxiety (Saraiva et al., 2024; Wu et al., 2023). Further, it has been suggested that self-criticism may play an important role in other areas of athlete well-being, such as post-injury recovery outcomes, shame, and self-compassion (Killham et al., 2018; Wu et al., 2023).

Given the impact of self-criticism on various aspects of athlete mental well-being, it is important to further understand the influence of criticism on athlete mental health, specifically as it relates to an athlete's psychopathology. Psychopathology describes any pattern of behavior that causes distress or impairs daily life functions, such as education, work, social relationships, or health maintenance (Bandura, 1969; Ullmann & Krasner, 1975). Psychopathology broadly encompasses symptoms of mental illness, including depression, anxiety, interpersonal sensitivity, somatic symptoms, and other related concerns (Lamers et al., 2015). Existing research has emphasized the importance of monitoring both positive mental health and psychopathology in clinical practice, and psychopathology is largely the focus of therapeutic interventions, both for athletes and those in the general population (Trompetter et al., 2017). Thus, exploring the impact of self-criticism on athlete psychopathology will inform development of targeted interventions to reduce the influence of psychopathological symptoms and, subsequently, improve athlete mental health and performance.

## Criticism of Teammates and Mental Health

Similar to self-criticism, teammate behavior can influence emotional affect and behavior of athletes (Hatfield et al., 1994). For instance, negative teammate behavior, such as criticism directed towards teammates, has the potential to negatively impact both the performance and well-being of athletes. In a systematic review, 58% of studies showed negative teammate behavior,

which included criticism, preceded negative emotions (Campo et al., 2012). Al-Yaaribi & Kavussanu (2017) found antisocial teammate behavior, including criticizing teammates, positively predicted athlete burnout and negatively predicted task cohesion, with negative affect mediating this relationship. A later study demonstrated a similar relationship, finding criticism of teammates led to more anger, decreased effort during competition, and poorer perceived performance in the recipients (Al-Yaaribi & Kavussanu, 2018). Athletes exposed to antisocial teammate behaviors, including criticism, reported more anger and anxiety, as well as decreased attention during sports competition (Al-Yaaribi et al., 2018). The results of these studies collectively show the importance of criticism as a component of social ineptitude, acting to potentially interfere with the well-being of athletes. However, the contribution of criticism on athletes' mental health is relatively undetermined.

There are many reasons athletes criticize their teammates. Some scholars posit that criticism towards teammates stems from perceptions that teammates performed poorly during competition (Grugan et al., 2020; Nealis et al., 2015). Hall (2006) relates this to other-oriented perfectionism, whereby athletes higher in other-oriented perfectionism will be more likely to criticize their teammates when they perform poorly due to feelings of anger and frustration (Hewitt et al., 2017). Other research has found that criticizing teammates is more related to personal status and teammate hierarchies. Boardley and Jackson (2012) found that athletes who criticized teammates either aimed to be the best player on their team or avoid being outperformed by teammates. Similarly, Boardley and Kavussanu (2010) attributed criticism of teammates to the desire to appear tough and be perceived as more skilled than other teammates. However, increased team unity, as exhibited through greater social and task cohesion, has the potential to protect against antisocial teammate behaviors, such as criticism, as was demonstrated in male hockey players (Sullivan & Feltz, 2001).

Considering the pivotal role that teammate-directed criticism can play in interpersonal conflict and overall well-being of teammates, it is important to explore the impact of criticizing teammates on the individual doing the criticizing. No studies have explored the extent to which being criticized by teammates is perceived by athletes to comprehensively influence psychiatric symptoms. Additionally, most studies examining criticism focus on the consequences of self-criticism or being the recipient of criticism, rather than examining the potential consequences associated with criticizing others. Given the demonstrated relationship between teammate-directed criticism and perfectionism, it is also important to explore mental health outcomes associated with teammate-directed criticism (Hall, 2006).

## Sociocultural Factors, Criticism, and Mental Health

It is imperative that these relationships be examined in both competitive sport settings as well as various cultural contexts. Thus, a sociocultural approach was used to explain these relationships in a complex and integrative way consistent with the range of athlete experiences. Sociocultural approaches are rooted in Vygotsky's (1978) work, which posits that one's development is influenced by the social and cultural contexts in which they are based. Sociocultural theories allow for criticism and mental health to be examined through athletes' dynamic engagement in various cultural contexts or demographics (De Abreu, 2000). De Abreu and Albers (2005) also highlight how social and cultural structures influence the use and understanding of psychological and cultural tools. Further, Kirmayer and Ryder (2016) suggest sociocultural contexts can shape the prevalence, experience, and course of mental disorders, whereby sociocultural factors influence individual development and exposure to adversity, elevating the risk for psychopathology. Additionally, cross-national studies have highlighted sociocultural variations in the expression and social response to psychological distress as well as cultural influences on social determinants of mental health (Draguns, 1986; Marsella & Yamada, 2007). Given the pivotal influence of sociocultural factors on psychopathological outcomes and social development, it is important to explore the relationships relevant to the current study using a sociocultural approach that appreciates the spectrum of the athlete experience, considering athlete ethnicity, gender, and age.

Empirical findings suggest that criticism may vary across cultural contexts. Heine and Hamamura (2007) indicated that East Asian cultures emphasize self-criticism and improvement, whereas Westerners are more likely to self-enhance and partake in self-serving bias. Similarly, Kitayama et al. (1997) suggest that that self-criticism is not perceived negatively in East Asian cultures and serves as an adaptive function for Asian Americans through self-improvement, where in Western cultures self-criticism is perceived as an indication of poor self-esteem. Thus, Kitayama et al. (1997) found Japanese college students were more likely to self-criticize than White American students. Tobin et al. (1989) conceptualize self-criticism as a form of disengagement coping for populations who might experience racial discrimination, where one blames oneself in response to experiencing racial discrimination. However, the literature suggests that these coping methods are maladaptive and associated with poor mental health outcomes (Crockett et al., 2007; Lee & Ahn, 2012). The use of self-criticism as a coping mechanism for discrimination has also been associated with anxiety, depression, and lower academic

and social capacity (Compas et al., 2001; Miller & Kaiser, 2001). For example, self-criticism mediated the relationship between perceptions of discrimination and well-being in Mexican American college students, with discrimination perceptions being positively associated with self-criticism and, subsequently, related to decreased well-being (Villegas-Gold & Yoo, 2014). Given the potential psychosocial consequences of self-criticism among various cultural groups, more research is needed to determine the nuances in self-criticism across these groups, especially given the paucity of this research in athletic populations (Chui et al., 2016; Lau et al., 2010).

Similar to ethnicity, gender might influence the relationship between criticism and mental health in athletes. Anshel et al. (2009) found that female athletes were more perfectionistic than male athletes, but they found no differences in self-criticism between genders. Similarly, Bhatt (2023) found no gender differences in self-criticism among visual artists. However, some studies have found gender differences in self-criticism. In a college sample, female college students were more likely to be self-critical than male students (Vanea & Ghizdareanu, 2012). Gender has been indicated to moderate the relationship between self-critical perfectionism and eating pathology in athletes, with only female athletes exhibiting an increase in self-critical perfectionism resulting in increased eating disorder symptoms (Shanmugam & Davies, 2015). Similar trends might also exist when examining criticism of teammates. In NAIA college athletes, female athletes were determined to report less antisocial behavior in sport than male athletes (Shields et al., 2018). Similarly, Coulomb-Cabagno and Rascle (2006) identified significantly more antisocial and aggressive behavior in male athletes than female athletes. Nevertheless, no studies have examined if gender influences the relationship between criticism and mental health symptom severity in athletes.

There is also no scientific evidence examining the influence of age on self-criticism in athletes; however, in the general population, self-criticism has been shown to decrease with age, across gender and cultural backgrounds (Kopala-Sibley et al., 2013). Similarly, Michaeli et al. (2018) found that self-criticism decreased over time in young adults, subsequently leading to better psychological health at older ages. However, athletes with more sport experience participate more often in antisocial behavior directed towards teammates (Stupuris et al., 2013). Kavussanu et al. (2006) found older male soccer players displayed more frequent antisocial behavior than their younger peers. These findings suggest the potential influence of age on both self-criticism and criticism of teammates in athletes in athletes. In transitioning to college, first-year athletes often face increased stressors managing dual sport and academic demands (Pritchard & Wilson, 2005). Yang et al. (2007)

found that first-year athletes experienced more symptoms of depression than their older counterparts, indicating these stressors lead to poor mental health outcomes. Indeed, although prior research indicates differences in age-related outcomes in criticism and mental health outcomes, no studies have investigated whether age moderates these relationships among collegiate athletes.

Given the paucity of research examining the relationship between criticism, both self- and teammate-directed, and athlete mental health, it seems important to further explore these relationships in an attempt to better understand predictors of mental health in collegiate athletes. Further, extant literature points to the potential role of sociocultural factors in these relationships, indicating the relevance of sociocultural analyses. The present study examines the extent to which both self-criticism and criticism of teammates in sport competition are associated with psychiatric symptoms in National Collegiate Athletic Association (NCAA) collegiate athletes. Additionally, the roles of gender, ethnicity, and age in these relationships were also explored to determine whether these sociocultural variables moderated the relationships between criticism and mental health. It was hypothesized that higher levels of both self-criticism and criticism of teammates would predict more severe mental health symptoms in NCAA athletes. Further, it was hypothesized that gender, ethnicity, and age would moderate these relationships.

## Methods

### Participants

The present study included 131 NCAA collegiate athletes (96 females, 35 males) from a large university in the southwestern United States. Athletes ranged in age from 18 to 22 years (M=19.52, SD=1.26) and competed in various sports, most often including soccer (8.7%), football (6.4%), cheer and dance (5.1%), swimming and diving (4.8%), track and field (4.2%), basketball (2.9%), and softball (2.6%). Athletes were 47.7% White/Caucasian, 18.9% Black/African-American, 9.1% Hispanic/Latino, 5.3 % Asian/Asian American, 2.3% Pacific Islander, and 16.7% other/multiethnic background. As can be seen in Table 1, most participants were freshman, and to a lesser extent, sophomores.

### Procedures

Participants were recruited to participate in a controlled treatment outcome study with two intervention arms (i.e., The Optimum Performance Program, Traditional Campus Counseling); both programs were focused on goal achievement specific to sports and life outside of sports. Participants were referred through the athletic department, including by coaches, athletic trainers, administrators, and through athlete-focused outreach events. Participants

who met inclusionary criteria (i.e., used alcohol or illicit drugs at least once during the previous 4 months, at least 18 years old, enrolled in a university-supported sport) were invited to participate in the study. Details of the overarching study are provided in Donohue et al. (2021). Briefly, assessment measures (i.e., focused on mental health symptoms, substance use, relationships, performance in sport) were administered longitudinally, and only the results of baseline assessment measures were examined in the current study. The study was approved by the university's institutional review board. Prior to the start of the study, a federal certificate of confidentiality was obtained to refute potential mandates in judicial proceedings. Written informed consent was collected from all participants prior to participating in the study. There were no adverse events due to the study.

## Measures

The Global Severity Index of Symptom Checklist 90 – Revised (GSI; Derogatis et al., 1976) assesses mental health symptom severity. The GSI has 90 items that use a five-point Likert scale to measure the extent of mental health symptoms experienced by participants within the past week. The total GSI score is obtained by summing the item responses, with higher GSI scores indicating greater mental health symptom severity and overall psychological distress. The GSI includes nine symptom scales, including somatization (e.g. "faintness or dizziness"), obsessive-compulsive (e.g. "unwanted thoughts, words, or ideas that won't leave your mind"), interpersonal sensibility (e.g. "your feelings being easily hurt"), depression (e.g. "feeling lonely"), anxiety (e.g. "heart pounding or racing"), anger-hostility (e.g. "temper outbursts that you could not control"), phobic-anxiety (e.g. "feeling afraid to go out of your house alone"), paranoid ideation (e.g. "feeling that most people cannot be trusted"), and psychoticism (e.g. "hearing voices that other people do not hear"). The GSI has been validated and found reliable in college student samples (Martinez et al., 2005; Todd et al., 1997), and the GSI has been effectively used in collegiate athletes (e.g., Donohue et al., 2004, 2015).

The Sport Interference Checklist (SIC; Donohue et al., 2007) assesses mental health-related factors negatively impacting sports training (Problems in Training Scale, PSTS) and competition (Problems in Sport Competition Scale; PSCS). Each of the aforementioned scales have 26 items, with each item being scored on a 7-point frequency scale, with higher scores indicating greater interference. The PSCS has been validated and found to be reliable in collegiate athlete samples (Donohue et al., 2007), and in collegiate athletes these scales have predicted poor mental health functioning (Donohue et al., 2019). For the purposes of the current analyses, items from the PSCS measuring Self-Criticism (e.g., "How often does being too critical of yourself interfere with your performance in competition") and Criticism of Teammates (e.g., "How often does being too critical of teammates interfere with your performance in competition") were used in statistical analysis.

## Data analyses

To determine the minimum sample size needed to test the research question, an a priori power analysis was conducted using G*Power version 3.1.9.7 (Faul et al., 2007). Results indicated the required sample size to achieve 95% power for detecting a medium effect, at a significance level of $\alpha = .05$, was N = 89 for a linear regression model with one predictor.

Thus, the obtained sample size of N = 131 is adequate for this study. RStudio software was used to conduct descriptive, regression, and moderation analyses. Descriptive statistics and frequencies were calculated for both demographic and sport-specific variables. Normality of the distribution of the linear model was examined for skewness. Linear regression analyses were conducted to assess the effect of Self-Criticism and Criticism of Teammates (items in the SIC) on mental health (items in the SCL-90-R) scores in athletes. Logarithmic transformations were used in the linear regression analyses because linear models were positively skewed, and assumption of normality was violated (Lee, 2020). Moderation analyses were conducted for Self-Criticism and Criticism of Teammate analyses, with gender, ethnicity, and age as moderating variables. An alpha level of .05 was set for determining statistical significance.

## Results

### Regression Analyses

Simple linear regression analyses were conducted to determine the effect of both types of criticism (i.e., Self-Criticism and Criticism of Teammates) on GSI scores in the current sample of athletes. Linear regression analysis revealed a statistically significant model ($F(1,129) = 11.48$, $p < .001$), with an adjusted $R^2$ of 0.075, for the effect of self-criticism on GSI scores. This finding suggests that Self-Criticism accounts for approximately 7.46% of the variance in mental health symptom severity among participants. In addition, the second linear regression analysis revealed a statistically significant model ($F(1,129) = 5.75$, $p = .018$), with an adjusted $R^2$ of 0.035, for the effect of Criticism of Teammates on GSI scores. This result indicates that Criticism of Teammates accounts for approximately 3.5% of the variance in the mental health symptom severity of the sample. These findings suggest both Self-Criticism and Criticism of Teammates are significant predictors of mental health in the sampled NCAA athletes.

### Moderation Analyses

Multiple moderation models were conducted to determine the influence of sociocultural variables, including ethnicity, gender, and age, on the relationship between Self-Criticism and GSI scores in NCAA athletes. Due to lower sample sizes of global majority athletes, the ethnicity moderation analyses were conducted by grouping Black/African-American, Hispanic/Latino, Asian/Asian American, Pacific Islander, and other/multiethnic participants into a global majority group. The ethnicity variable was then transformed into a moderating variable with two levels, White and global majority. Fol-

lowing analysis, ethnicity was a significant moderator of the relationship between Self-Criticism and GSI scores, and it explained a significant increase in variance in mental health symptom severity, $\Delta R2 = .027$, $F(1, 127) = 4.067$, $p = .0458$. As illustrated in Figure 1, global majority athletes' mental health symptom severity increased significantly more than White athletes' for each unit increase in Self-Criticism. Neither age nor gender moderated the relationship between Self-Criticism and mental health symptom severity in the current sample of athletes.

In addition to Self-Criticism, moderation models were conducted to determine the influence of these sociocultural variables on the relationship between Criticism of Teammates and GSI scores. There were no significant interactions in these analyses, indicating that ethnicity, gender, and age do not moderate the relationship between the Criticism of Teammates and mental health symptom severity in the current sample.

## Discussion

The present study explored the influence of self-criticism and criticism of teammates during sport competition on psychiatric symptomology/mental health of NCAA collegiate athletes, as well as the role of sociocultural factors, including ethnicity, gender, and age, in moderating these relationships.

Results from the regression analyses suggest self-criticism in sport competition is likely to predict symptoms of psychopathology in an ethnically diverse sample of NCAA athletes. This is in line with findings from other studies showing self-criticism's detrimental effect on psychological well-being in athletes (Oliveira, et al., 2022; 2023). Similarly, extant literature has found self-criticism to be predictive of negative affect and sport anxiety in collegiate athlete samples (Powers et al., 2009; Powers et al., 2011; Saraiva et al., 2024; Wu et al., 2023). These trends have been identified in the general population, including links between self-criticism and various forms of psychopathology (McIntyre et al., 2018; Werner et al., 2019). The findings from this study are novel given its focus on self-criticism in the sporting context, indicating that self-criticism in performance settings might also contribute to poor mental health outcomes in athletes. Prior scholars explain this relationship by positing self-criticism as a maladaptive emotional regulation process to cope with perceptions of inadequacy (Gilbert et al., 2004), which often results in psychological distress in the general population (McIntyre et al., 2018). In athletes, self-criticism may present in response to sport-related fail-

ures, resulting in emotional distress (Ferguson et al., 2014; Mosewich et al., 2013). Many athletes perceive self-criticism as important in allowing them to improve and succeed in sport (Rodriguez & Ebbeck, 2015). However, as the present study suggests, this use of self-criticism can result in worse mental health outcomes in competitive settings.

Criticism of teammates in the sport context was found to predict mental health symptom severity. Along this vein, exposure to negative teammate behavior, such as criticism, has also been linked to reduced performance outcomes, burnout, and negative emotions, such as anger and anxiety (Al-Yaaribi et al., 2018; Al-Yaaribi & Kavussanu, 2017; 2018; Campo et al., 2012). Further, research in the general population suggests that poor moral behavior, such as criticizing others, can have negative consequences on psychological well-being and other psychosocial outcomes (Kavussanu, 2012; Pardini, 2016). However, this study is the first to demonstrate that when athletes criticize their teammates their mental health is negatively impacted. These findings might be explained by anger, possibly caused by poor teammate performance, which has been linked to poor mental health outcomes in NCAA athletes (Behjame et al., 2021; Hall, 2006; Hewitt et al., 2017; Madden et al., 2021). Additionally, negative social interactions between teammates has been associated with increased stress and negative affect (DeFreese & Smith, 2014), which could further explain the link between criticizing teammates and psychiatric symptom severity. When considering our results within the larger body of literature, the current findings are supported by the existing research; however, they also extend these relationships to the athlete doing the criticism, which has not yet been explored. These results suggest that criticizing one's teammates could be an important predictive factor in the mental health of NCAA athletes.

To further understand the sociocultural factors that may influence the strength of the relationship between self-criticism and mental health symptom severity in collegiate athletes, sociocultural moderators, including ethnicity, gender, and age, were studied. Results supported the hypothesis that ethnicity would moderate the relationship between self-criticism and psychiatric symptoms in participants, with global majority athletes experiencing more severe mental health symptoms than White athletes as the severity of self-criticism increased. These findings, although novel, might be explained by the varying use of criticism across cultural contexts. Prior research suggests that some cultures of the global majority may be more likely to use self-criticism as a tool of self-improvement (Heine & Hamamura, 2007; Kitayama et al., 1997). Additionally, scholars posit that self-criticism may be used as a coping mechanism in response to racial discrimination (Tobin et

al., 1989). Thus, it may be that global majority athletes are more likely to engage in self-criticism than their White counterparts as a coping strategy in response to discrimination, although these strategies have been shown to be maladaptive and associated with poor mental health outcomes (Compas et al., 2001; Miller & Kaiser, 2001). For example, self-criticism served as a mediator of perceptions of discrimination and well-being in Mexican American college students (Villegas-Gold & Yoo, 2014), and African American collegiate students have been found to report greater perceived problems due to their ethnic culture than their White peers (Donohue et al., 2006). Overall, these findings highlight the importance of addressing cultural factors within the context of sport as it relates to self-criticism and mental health. Indeed, sports organizations and practitioners should carefully consider intervention and assessment tools that are tailored to an individual athlete's cultural identity to improve treatment engagement and expected outcomes. Along this vein, Donohue et al. (2021) found semi-structured interviews that were focused on assessing the extent to which collegiate athletes' experienced problems due to their culture (i.e., ethnic, sport, personal ambitions, choice) improved mental health intervention engagement.

There was no evidence to suggest gender moderated the relationship between self-criticism and psychiatric symptoms in the present sample, as hypothesized. Although no studies have explicitly explored the role of gender in this relationship, these results are in line with extant literature suggesting there are no differences in self-criticism between male and female athletes or performers (Anshel et al., 2009; Bhatt, 2023). However, it seems that gender may moderate the relationship between self-critical perfectionism and certain aspects of psychopathology, such as eating disorders (Shanmugam & Davies, 2015). Further, studies in the general population have found gender-specific differences in self-criticism, where female college students tend to be more self-critical. Thus, it could be that gender differences in self-criticism moderate specific psychopathological outcomes (e.g. eating disorder pathology), but not broader measurements of psychopathology, like those assessed in this study.

Age was also not shown to be a moderator of the relationship between self-criticism and psychiatric symptoms. Self-criticism has been shown to decrease with age in the general population, potentially enhancing mental health with the passage of time (Kopala-Sibley et al., 2013; Michaeli et al., 2018). However, these effects may not be as apparent in the current sample due to restricted range in age among participants, as participants only ranged four years in age. Further, the age of onset of three-quarters of psychiatrics disorders begin by age 24 (Kessler et al., 2005); however, the oldest collegiate

athletes in the current sample were 22. Thus, the current sample may not be representative of the full range of psychopathology in young adult athletes, therefore limiting the predictive ability of self-criticism and age in this population. Previous research in the general population of college students also points to varying sources of stress among younger and older students, not simply to general differences in psychological distress between them (Wang, 2018). This could likely be extended to student-athletes, as young student-athletes may face more stress related to transitioning to college, where older athletes may experience stress relating to retirement and transitions out of sport.

Gender, age, and ethnicity did not moderate the relationship between criticism of teammates and mental health symptom severity. Along these lines, we could find no studies that have examined the influence of these sociocultural factors as moderators specific to the relationship between criticism and mental health severity. However, results of the gender moderation analysis were inconsistent with our hypothesis, given that male athletes have been found to take part in more antisocial behavior than female athletes (Coulomb-Cabagno & Rascle, 2006; Shields et al., 2018), and female athletes tend to have worse mental health outcomes than their male peers (Küttel & Larsen, 2019). It may be that poor mental health in female athletes is better explained by other factors, such as societal pressures, rather than antisocial behavior, such as criticism of teammates (Herrero et al., 2021). Kavussanu et al. (2009) found no differences in empathy, a common correlate of antisocial behavior, between men and women soccer players. Similarly, Bronikowska et al. (2020) concluded that adolescent athletes did not differ in moral competence due to gender. These findings are consistent with the lack of gender moderation effects in the current study and suggest gender differences in athlete mental health are better explained by other predictors.

Similarly, age did not moderate the relationship between criticism of teammates and mental health, contrary to our hypothesis. Although older athletes and those with more sport experience are more likely to participate in antisocial teammate behavior (Kavussanu et al., 2006; Stupuris et al., 2013), younger collegiate athletes tend to experience more stressors and worse mental health outcomes (Pritchard & Wilson, 2005; Yang et al., 2007). These trends might explain our results, as older age might serve as a protective factor for mental health yet also be a risk factor for criticizing teammates. However, other researchers have found correlation between age and antisocial behavior in sport (Rutten et al., 2011), which is more consistent with the results of this study. This could be due to restriction of range in the current sample, as the age range of athletes in the study was only four years, which likely limited the ability to explore age-related differences among athletes.

Although ethnicity was found to be a significant moderator between self-criticism and mental health symptomology, it was not a moderator of criticism of teammates and mental health. This might indicate that ethnicity does not serve as a significant factor in this relationship. Although no existing studies have examined this relationship, extant literature has suggested that ethnic identity is likely not a risk or protective factor for antisocial behavior in Asian American college students (Park et al., 2013). Further, null results could be explained by the categorical measurement of ethnicity used in this study, rather than utilizing a measure of ethnic identity. Previous research has suggested that individuals with strong ethnic identity may experience stress-buffering effects that lead to positive health consequences (Tajfel & Turner, 1986; Yip et al., 2008). Alternatively, those with strong ethnic identities may be more sensitive to the experience of ethnic discrimination, which has been linked to more negative internalizing and behavioral outcomes (Chan & Mendoza-Denton, 2008; Lee, 2005). Nonetheless, ethnic identity seems to serve as a potential predictor of health and behavioral outcomes in the general population.

## Practical Implications

Findings from this study can be used to inform the development and adaptation of mental health and performance-based interventions to mitigate the influence of self-criticism and teammate criticism on athlete mental health. More specifically, these interventions might incorporate positive self-talk, self-compassion, or other strategies designed to reduce the effect of criticism on athlete well-being, particularly those rooted in a positive psychological approach (Donohue et al., 2015; Ferguson et al., 2022). In a controlled trial, Donohue et al. (2018) found mental health, sport performance and relationships were improved consequent to a comprehensive intervention that targeted the reduction of self- and teammate criticism through performance optimization of thoughts, actions and perceptions.

Given the influence of ethnic background on findings in the current study, it is also recommended that interventions are culturally-informed and allow for tailoring to athletes' various cultural identities, particularly those that may intersect (Schinke et al., 2019). Further, clinical practitioners or sports administrators might consider implementing appropriate assessments of self-criticism and teammate-criticism to assist in identification of predictors of poor mental health (Donohue et al., 2007), or those that assess the impact of sport culture (Donohue et al., 2021). With respect to coaching,

researchers have found that the coach-athlete relationship can serve as an important predictor in athlete mental health outcomes (Jowett, 2017). Thus, it is recommended that coaches seek to develop supportive relationships with their athletes and maintain awareness of the use of criticism, and its prevention, among team members.

### Limitations and Future Directions

Future research might further explore the influence of ethnicity on self-criticism and mental health outcomes in athletes, potentially examining differences among various ethnic groups with larger, more ethnically diverse samples. Given the lower explanatory power for criticism of teammates on athlete psychopathology, more predictors of athlete mental health should be explored to enable greater explanation of the variance. Additional limitations of this study include the cross-sectional design, which limits the ability to establish cause-and-effect relationships between the variables. Further, reliance on self-report measures could have introduced self-report bias to the participants' responses. Sport-specific variables, such as competition level, might also be examined to determine their influence on self-criticism and criticism of teammates in athletes. Given the significant findings on the impact of criticism on mental health, future intervention development might also focus on targeting both self-criticism and teammate-directed criticism when seeking to improve athlete mental health. Additionally, we recommend the development of more comprehensive instruments that assess self-criticism and criticism of teammates in sport. Current instruments with criticism subscales include the Student Athlete Relationship Inventory which screens for relationship problems in student-athletes (SARI; Donohue et al., 2007), which could prove useful in collegiate athlete populations.

## Conclusion

Findings from the current study indicate the contribution of self-criticism in psychopathology of collegiate athletes. The current evidence suggests that criticism of teammates might also play a significant role in psychiatric symptomology. It is important that sociocultural determinants that may exacerbate the negative influence of criticism on mental health, particularly ethnicity, be understood to better address athlete mental health in a culturally-appropriate manner.

## Appendix A

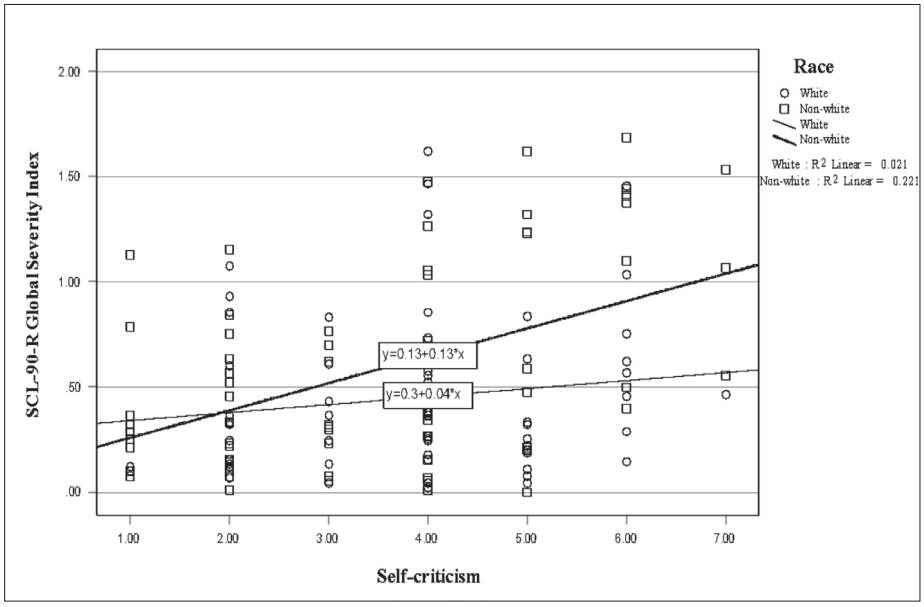


Figure 1 - Moderation effect of ethnicity (White/Non-White) on the relationship between self-criticism and SCL-90-R Global Severity scores

## Appendix B

*Participant Demographics*

| Demographic | λ | % |
|---|---|---|
| Gender | | |
| Male | 35 | 26.7 |
| Female | 96 | 73.3 |
| Ethnicity | | |
| White/Caucasian | 63 | 47.7 |
| Black/African-American | 25 | 18.9 |
| Hispanic/Latino | 12 | 9.1 |
| Asian/Asian American | 7 | 5.3 |
| Pacific Islander | 3 | 2.3 |
| Other/Multiethnic | 22 | 16.7 |
| Class Status | | |
| Freshman | 45 | 34.1 |
| Sophomore | 38 | 28.8 |
| Junior | 27 | 20.5 |
| Senior | 22 | 16.7 |
| | M | SD |
| Age | 19.52 | 1.26 |

*Note.* λ = frequency

## Acknowledgements

Authors report there are no competing interests to declare. The data that support the findings of this study are available upon reasonable request.

## REFERENCES

Allen, M. S., Iliescu, D., & Greiff, S. (2022). Single item measures in psychological science. *European Journal of Psychological Assessment*. https://doi.org/10.1027/1015-5759/a000699

Al-Yaaribi, A., & Kavussanu, M. (2017). Teammate prosocial and antisocial behaviors predict task cohesion and burnout: The mediating role of affect. *Journal of sport and exercise psychology, 39*(3), 199-208. https://doi.org/10.1123/jsep.2016-0336

Al-Yaaribi, A., & Kavussanu, M. (2018). Consequences of prosocial and antisocial behaviors in adolescent male soccer players: The moderating role of motivational climate. *Psychology of Sport and Exercise*, *37*, 91-99. https://doi.org/10.1016/j.psychsport.2018.04.005

Al-Yaaribi, A., Kavussanu, M., & Ring, C. (2018). The effects of prosocial and antisocial behaviors on emotion, attention, and performance during a competitive basketball task. *Journal of Sport and Exercise Psychology, 40*(6), 303-311. https://doi.org/10.1123/jsep.2017-0179

Anshel, M. H., Kim, J. K., & Henry, R. (2009). Reconceptualizing indicants of sport perfectionism as a function of gender. *Journal of Sport Behavior*, *32*(4).

Atroszko, P., Pianka, L., Raczyńska, A., Atroszko, B., & Sęktas, M. (2015). Validity and reliability of single-item self-report measures of social support. Bandura, A. (1969). *Principles of behavior modification*. New York: Holt, Rinehart & Winston.

Behjame, F., Gharayagh Zandi, H., & Khabiri, M. (2021). The role of cognitive emotion regulation strategies on Predicting Aggression and competitive anger among athletic students. *International Journal of Motor Control and Learning, 3*(4), 19-26.

Bhatt, S. (2023). A Gender Study on Perfectionism, Self-criticism, and Self-reflection among Visual Artists. *International Journal of Interdisciplinary Approaches in Psychology*, *1*(6), 1-15.

Boardley, I. D., & Jackson, B. (2012). When teammates are viewed as rivals: A cross-national investigation of achievement goals and intrateam moral behavior. *Journal of Sport and Exercise Psychology*, *34*(4), 503-524. https://doi.org/10.1123/jsep.34.4.503

Boardley, I. D., & Kavussanu, M. (2010). Effects of goal orientation and perceived value of toughness on antisocial behavior in soccer: The mediating role of moral disengagement. *Journal of sport and exercise psychology*, *32*(2), 176-192. https://doi.org/10.1123/jsep.32.2.176

Bronikowska, M., Korcz, A., & Bronikowski, M. (2020). The role of sports practice in young adolescent development of moral competence. *International Journal of Environmental Research and Public Health, 17*(15), 5324.

Campo, M., Mellalieu, S., Ferrand, C., Martinent, G., & Rosnet, E. (2012). Emotions in team contact sports: A systematic review. *The Sport Psychologist, 26*(1), 62-97. https://doi.org/10.1123/tsp.26.1.62

Chan, W., & Mendoza-Denton, R. (2008). Status-based rejection sensitivity among Asian Americans: Implications for psychological distress. *Journal of Personality, 76*, 1317–1346. doi:10.1111/j.1467-6494 .2008.00522.x

Chang, C., Putukian, M., Aerni, G., Diamond, A., Hong, G., Ingram, Y., Reardon, C.L., & Wolanin, A. (2020). Mental health issues and psychological factors in athletes: Detection, management, effect on performance and prevention: American Medical Society for Sports Medicine Position Statement-Executive Summary. *British Journal of Sports Medicine, 54*(4), 216-220. https://doi.org/10.1136/bjsports-2019-101583

Chui, H., Zilcha-Mano, S., Dinger, U., Barrett, M.S., & Barber, J.P. (2016). Dependency and self-criticism in treatments for depression. *Journal of Counseling Psychology*, *63*(4), 452.

Compas, B.E., Connor-Smith, J.K., Saltzman, H., Thomsen, A.H., & Wadsworth, M.E. (2001). Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. *Psychological Bulletin, 127*, 87-127. doi:10.1037/0033-2909.127.1.87

Coulomb-Cabagno, G., & Rascle, O. (2006). Team sports players' observed aggression as a function of 10 gender, competitive level, and sport type. *Journal of Applied Social Psychology, 36*, 1980-2000.

Cowden, R.G., Joynt, S., Crust, L., Hook, J.N., & Worthington, E.L. (2018). How do mentally tough athletes overcome self-directed anger, shame, and criticism? A self-forgiveness mediation analysis.

Crockett, L.J., Iturbide, M.I., Torres Stone, R.A., McGinley, M., Raffaelli, M., & Carlo, G. (2007). Acculturative stress, social support, and coping: Relations to psychological adjustment among Mexican American college students. *Cultural Diversity and Ethnic Minority Psychology, 13*, 347-355. doi:10.1037/1099-9809.13.4.347

De Abreu, G. (2000). Relationships between macro and micro socio-cultural contexts: Implications for the study of interactions in the mathematics classroom. *Educational Studies in Mathematics*, *41*(1), 1-29.

De Abreu, G., & Elbers, E. (2005). The social mediation of learning in multiethnic schools: Introduction. *European Journal of Psychology of Education*, *20*, 3-11.

Derogatis, L.R. (1994). Symptom checklist-90-R: Administration, scoring, and procedures manual (3rd ed.). Minneapolis, MN: National Computer Systems.

Derogatis, L.R., Rickels, K., & Rock, A. (1976). The SCL-90 and the MMPI: A step in the validation of a new self-report scale. *British Journal of Psychiatry, 128*, 280-289. doi:10.1192/bjp.128.3.280

Donohue, B., Chow, G.M., Pitts, M., Loughran, T., Schubert, K.N., Gavrilova, Y., Allen, D.N. (2015). Piloting a family-supported approach to concurrently optimize mental health and sport performance in athletes. *Clinical Case Studies, 14*, 159-177. doi: 10.1177/1534650114548311

Donohue, B., Covassin, T., Lancer, K., Dickens, Y., Miller, Y., Hash, A., & Genet, J. (2004). Examination of psychiatric symptoms in student athletes. *Journal of General Psychology, 131*, 29-35. doi:10.3200/GENP.131.1.29-35

Donohue, B., Galante, M., Maietta, J., Lee, B., Paul, N., Perry, J. E., ... & Allen, D.N. (2019). Empirical development of a screening method to assist mental health referrals in collegiate athletes. *Journal of Clinical Sport Psychology, 13*(4), 561-579. http://dx.doi.org/10.1123/jcsp.2018-0070

Donohue, B., Gavrilova, E., Danlag, A., Perry, J. Phillips, C., Allen, D. A., & Benning, S. (2021). A comprehensive examination of collegiate athletes' utilization of goal oriented psychological assessment and intervention services. *Psychology in the Schools, 58*, 458-474. https://doi.org/10.1002/pits.22458

Donohue, B., Silver, N., Dickens, Y., Covassin, T., & Lancer, K. (2007). Development and initial psychometric evaluation of the sport interference checklist. *Behavior Modification, 31*(6), 937-957. doi:10.1177/0145445507303827

Donohue, B., Strada, M.J., Rosales, R., Taylor-Caldwell, A., Ingham, D., Ahmad, S., Lefforge, N. L., Koptf, M., Devore, G., Soares, B., Radkovich, B., & Laino, R. (2006). The Semi-Structured Interview for Consideration of Ethnic Culture in Therapy Scale: Initial psychometric and outcome support. *Behavior Modification,* 867-891.

Draguns, J. G. (1986). Culture and psychopathology: What is known about their relationship?. *Australian Journal of Psychology*, *38*(3), 329-338.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical

power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175-191. https://doi.org/10.3758/BF03193146

Ferguson, L.J., Adam, M.E., Gunnell, K.E., Kowalski, K.C., Mack, D.E., Mosewich, A.D., & Murphy, N. (2022). Self-compassion or self-criticism? Predicting women athletes' psychological flourishing in sport in Canada. *Journal of Happiness Studies*, *23*(5), 1923-1939. https://doi.org/10.1007/s10902-021-00483-1

Ferguson, L.J., Kowalski, K.C., Mack, D.E., & Sabiston, C.M. (2014). Exploring self-compassion and eudaimonic well-being in young women athletes. *Journal of Sport & Exercise Psychology, 36*, 203-216. https://doi.org/10.1123/jsep.2013-0096

Gilbert, P., Clarke, M., Hempel, S., Miles, J. N., & Irons, C. (2004). Criticizing and reassuring oneself: An exploration of forms, styles and reasons in female students. *British Journal of Clinical Psychology*, *43*(1), 31-50.

Grugan, M.C., Jowett, G.E., Mallinson-Howard, S.H., & Hall, H.K. (2020). The relationships between perfectionism, angry reactions, and antisocial behavior in team sport. *Sport, Exercise, and Performance Psychology*, *9*(4), 543. https://psycnet.apa.org/doi/10.1037/spy0000198

Hall, H. K. (2006). Perfectionism: A hallmark quality of word class performers, or a psychological impediment to athletic development? In D. Hackfort, & G. Tenenbaum (Eds.), Perspectives on sport and exercise psychology: Essential processes for attaining peak performance (Vol. 1, pp. 178-211). Oxford, UK: Meyer & Meyer Sport.

Hatfield E, Cacioppo J, Rapson RL. Emotional contagion. New York, NY: Cambridge University Press, 1994.

Heine, S.J., & Hamamura, T. (2007). In search of East Asian self-enhancement. *Personality and Social Psychology Review: Review, 11*(1), 4-27. doi: 10.1177/1088868306294587

Hewitt, P.L., Flett, G.L., & Mikail, S.F. (2017). Perfectionism: A relational approach to conceptualization, assessment, and treatment. London, UK: Guilford Press.

Herrero, C.P., Jejurikar, N., & Carter, C.W. (2021). The psychology of the female athlete: how mental health and wellness mediate sports performance, injury and recovery. *Annals of Joint*, *6*. doi: 10.21037/aoj-20-53

Horowitz, L.M., Rosenberg, S.E., Baer, B.A., Ureno, G., & Villasenor, V.S. (1988). Inventory of interpersonal problems: Psychometric properties and clinical applications. *Journal of Consulting and Clinical Psychology, 56*, 885-892.

Jowett, S. (2017). Coaching effectiveness: The coach-athlete relationship at its heart. *Current opinion in psychology*, *16*, 154-158.

Kannan, D., & Levitt, H.M. (2013). A review of client self-criticism in psychotherapy. *Journal of Psychotherapy Integration*, *23*(2), 166.

Kavussanu, M. (2012). Moral behavior in sport. In Oxford University Press (Ed.), *The Oxford handbook of sport and performance psychology* (pp. 364-383). New York.

Kavussanu, M., Seal, A.R., & Phillips, D.R. (2006). Observed prosocial and antisocial behaviors in male soccer teams: Age differences across adolescence and the role of motivational variables. *Journal of Applied Sport Psychology*, *18*(4), 326-344.

Kavussanu, M., Stamp, R., Slade, G., & Ring, C. (2009). Observed Prosocial and Antisocial Behaviors in Male and Female Soccer Players. *Journal of Applied Sport Psychology, 21*, S62-S76. https://doi.org/10.1080/10413200802624292

Kessler, R.C., Berglund, P., Demler, O., Jin, R., Merikangas, K.R., & Walters, E.E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of general psychiatry*, *62*(6), 593-602.

Kirmayer, L.J., & Ryder, A.G. (2016). Culture and psychopathology. *Current Opinion in Psychology*, *8*, 143-148.

Kitayama, S., Markus, H.R., Matsumoto, H., & Norasakkunkit, V. (1997). Individual and collective processes in the construction of the self: self-enhancement in the United States

and self-criticism in Japan. *Journal of personality and social psychology*, *72*(6), 1245. https://psycnet.apa.org/doi/10.1037/0022-3514.72.6.1245

Kopala-Sibley, D. C., Mongrain, M., & Zuroff, D. C. (2013). A lifespan perspective on dependency and self-criticism: Age-related differences from 18 to 59. *Journal of Adult Development*, *20*, 126-141.

Killham, M.E., Mosewich, A.D., Mack, D.E., Gunnell, K.E., & Ferguson, L.J. (2018). Women athletes' self-compassion, self-criticism, and perceived sport performance. Sport, Exercise, and Performance Psychology, 7(3), 297. https://doi.org/10.1037/spy0000127

Küttel, A., & Larsen, C. H. (2020). Risk and protective factors for mental health in elite athletes: A scoping review. *International Review of Sport and Exercise Psychology, 13*(1), 231-265. https://doi.org/10.1080/1750984X.2019.1689574

Lamers, S.M., Westerhof, G.J., Glas, C.A., & Bohlmeijer, E.T. (2015). The bidirectional relation between positive mental health and psychopathology in a longitudinal representative panel study. *The Journal of Positive Psychology*, *10*(6), 553-560.

Lau, A.S., Chang, D.F., & Okazaki, S. (2010). Methodological challenges in treatment outcome research with ethnic minorities. *Cultural Diversity and Ethnic Minority Psychology, 16*(4), 573-580. doi:10.1037/a0021371

Lee, D.K. (2020). Data transformation: a focus on the interpretation. *Korean journal of anesthesiology*, *73*(6), 503.

Lee, D.L., & Ahn, S. (2012). Discrimination against Latina/os: A metaanalysis of individual-level resources and outcomes. *The Counseling Psychologist, 40*, 28-65. doi:10.1177/0011000011403326

Lee, R.M. (2005). Resilience against discrimination: Ethnic identity and other-group orientation as protective factors for Korean Americans. *Journal of Counseling Psychology, 52*, 36-44. doi:10.1037/0022- 0167.52.1.36

Madden, R., Winkelmann, Z.K., Weber, S.R., Moore, E.M., & Torres-McGehee, T.M. (2021). Examination of Anger Prevalence in NCAA Division I Student-Athletes. *Journal of Sports Medicine and Allied Health Sciences: Official Journal of the Ohio Athletic Trainers Association, 6*(3), 1.

Marsella, A.J., & Yamada, A.M. (2007). Culture and psychopathology. *Handbook of cultural psychology*, 797-818.

Martinez, S., Stillerman, L., & Waldo, M. (2005). Reliability and validity of the SCL-90-R with Hispanic college students. *Hispanic Journal of Behavioral Sciences, 27*(2), 254–264. doi:10.1177/0739986305274911

McIntyre, R., Smith, P., & Rimes, K. A. (2018). The role of self-criticism in common mental health difficulties in students: A systematic review of prospective studies. *Mental Health & Prevention*, *10*, 13-27. https://doi.org/10.1016/j.mhp.2018.02.003

Michaeli, Y., Kalfon Hakhmigari, M., Dickson, D. J., Scharf, M., & Shulman, S. (2019). The role of change in self-criticism across young adulthood in explaining developmental outcomes and psychological wellbeing. *Journal of Personality*, *87*(4), 785-798.

Miller, C.T., & Kaiser, C.R. (2001). A theoretical perspective on coping with stigma. *Journal of Social Issues, 57*, 73-92. doi:10.1111/0022-4537 .00202

Mosewich, A.D., Crocker, P.R., Kowalski, K.C., & DeLongis, A. (2013). Applying self-compassion in sport: An intervention with women athletes. *Journal of sport and exercise psychology*, *35*(5), 514-524.

Nealis, L.J., Sherry, S.B., Sherry, D.L., Stewart, S.H., & Macneil, M.A. (2015). Toward a better understanding of narcissistic perfectionism: Evidence of factorial validity, incremental validity, and mediating mechanisms. *Journal of Research in Personality, 57*(1), 11-25.

Oliveira, S., Cunha, M., Rosado, A.F., Gomes, B., & Ferreira, C. (2022). What could explain the psychological well-being and performance of young athletes? The role of social safeness and self-criticism. *Análise Psicológica*, *40*(2), 191-203. doi: 10.14417/ap.1913

Oliveira, S., Cunha, M., Rosado, A., & Ferreira, C. (2023). How athletes' perception of coach-related critical attitudes affect their mental health? The role of self-criticism. *Current Psychology, 42*(22), 18499-18506.

Pardini, D. (2016). Empirically based strategies for preventing juvenile delinquency. *Child and Adolescent Psychiatric Clinics, 25*(2), 257-268. https://doi.org/10.1016/j.chc.2015.11.009

Park, I.J., Schwartz, S.J., Lee, R.M., Kim, M., & Rodriguez, L. (2013). Perceived racial/ethnic discrimination and antisocial behaviors among Asian American college students: testing the moderating roles of ethnic and American identity. *Cultural Diversity & Ethnic Minority Psychology*, *19*(2), 166.

Powers, T.A., Koestner, R., Lacaille, N., Kwan, L., & Zuroff, D.C. (2009). Self-criticism, motivation, and goal progress of athletes and musicians: A prospective study. *Personality and Individual Differences*, *47*(4), 279-283. https://doi.org/10.1016/j.paid.2009.03.012

Powers, T.A., Koestner, R., Zuroff, D.C., Milyavskaya, M., & Gorin, A.A. (2011). The effects of self-criticism and self-oriented perfectionism on goal pursuit. Personality and Social Psychology Bulletin, 37(7), 964-975. DOI: 10.1177/0146167211410246

Pritchard, M., & Wilson, G. (2005). Comparing sources of stress in college student athletes and non-athletes. *Athletic Insight: The Online Journal of Sports Psychology*, *5*(1), 1-8.

Raver, J.L., Jensen, J.M., Lee, J., & O'Reilly, J. (2012). Destructive criticism revisited: Appraisals, task outcomes, and the moderating role of competitiveness. *Applied Psychology*, *61*(2), 177-203.

Reardon, C.L., Hainline, B., Aron, C.M., Baron, D., Baum, A.L., Bindra, A., et al. (2019). Mental health in elite athletes: International Olympic Committee consensus statement (2019). *British Journal of Sports Medicine, 53*, 667-699. doi: 10.1136/ bjsports-2019-100715

Reinhardt, M., Tóth, L., & Kenneth, G. (2019). Positive mental health of perfectionists – patterns of perfectionism, emotion regulation and subjective well-being among young elite athletes [Positive mental health of perfectionists – patterns of perfectionism, emotion regulation and subjective well-being among young elite athletes]. *Hungarian Psychological Review, 74* (3), 301-325. https://doi.org/10.1556/0016.2019.74.3.3

Rodriguez, M., & Ebbeck, V. (2015). Implementing self-compassion strategies with female college gymnasts. *Journal of Sport Psychology in Action*, *6*(1), 44-53.

Rutten, E.A., Schuengel, C., Dirks, E., Stams, G.J.J., Biesta, G.J., & Hoeksma, J.B. (2011). Predictors of antisocial and prosocial behavior in an adolescent sports context. *Social development*, *20*(2), 294-315.

Saraiva, M., Oliveira, S., Coimbra, M., & Ferreira, C. (2024). Understanding sport anxiety among competitive athletes: the role of shame, fear of self-compassion and self-criticism. International Journal of Sport and Exercise Psychology, 1-19. https://doi.org/10.1080/1612197X.2024.2308861

Saw, A.E., Main, L.C., & Gastin, P.B. (2016). Monitoring the athlete training response: Subjective self-reported measures trump commonly used objective measures: A systematic review. *British Journal of Sports Medicine, 50*(5), 281-291. http://dx.doi.org/10.1136/bjsports-2015-094758

Schinke, R.J., Blodgett, A.T., Ryba, T.V., & Middleton, T.R. (2019). Cultural sport psychology as a pathway to advances in identity and settlement research to practice. *Psychology of Sport and Exercise*, *42*, 58-65.

Shahar, B., Szsepsenwol, O., Zilcha-Mano, S., Haim, N., Zamir, O., Levi-Yeshuvi, S., & Levit-Binnun, N. (2015). A wait-list randomized controlled trial of loving-kindness meditation programme for selfcriticism. *Clinical Psychology & Psychotherapy, 22*, 346–356. https://doi.org/10.1002/cpp.1893

Shanmugam, V., & Davies, B. (2015). Clinical perfectionism and eating psychopathology in athletes: The role of gender. *Personality and individual differences, 74*, 99-105. https://doi.org/10.1016/j.paid.2014.09.047

Shields, D.L., Funk, C.D., & Bredemeier, B.L. (2018). Relationships among moral and contesting variables and prosocial and antisocial behavior in sport. *Journal of Moral Education*, *47*(1), 17-33.

Stupuris, T., Šukys, S., & Tilindienė, I. (2013). Relationship between adolescent athletes' values and behavior in sport and perceived coach's character development competency. *Baltic Journal of Sport and Health Sciences*, *4*(91).

Sullivan, P.J., & Feltz, D.L. (2001). The relationship between intrateam conflict and cohesion within hockey teams. *Small Group Research*, *32*(3), 342-355. https://doi.org/10.1177/104649640103200304

Tajfel, H., & Turner, J.C. (1986). The social identity theory of inter-group behavior. In S. Worchel, & L.W. Austin (Eds.), *Psychology of intergroup relations* (pp. 7-24). Chicago, IL: Nelson Hall.

Tobin, D.L., Holroyd, K.A., Reynolds, R.V., & Wigal, J.K. (1989). The hierarchical factor structure of the coping strategies inventory. *Cognitive Therapy and Research, 13*, 343–361. doi:10.1007/BF01173478

Todd, D.M., Deane, F.P., & McKenna, P.K. (1997). Appropriateness of SCL-90-R Adolescent and Adult Norms for Outpatient and Nonpatient College Students. *Journal of Counseling Psychology, 44*(3), 294-301. doi:10.1037/0022-0167.44.3.294

Trompetter, H.R., De Kleine, E., & Bohlmeijer, E.T. (2017). Why does positive mental health buffer against psychopathology? An exploratory study on self-compassion as a resilience mechanism and adaptive emotion regulation strategy. *Cognitive therapy and research*, *41*, 459-468.Ullmann, L. P., & Krasner, L. (1975). *A psychological approach to abnormal behavior* (Second ed.). New York: Prentice-Hall.

Vanea, M., & Ghizdareanu, E. (2012). High standards and self-criticism in university environment-gender, age and learning context differences. *Procedia-Social and Behavioral Sciences*, *33*, 895-899.

Villegas-Gold, R., & Yoo, H. C. (2014). Coping with discrimination among Mexican American college students. *Journal of counseling psychology*, *61*(3), 404. https://psycnet.apa.org/doi/10.1037/a0036591

Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes* (Vol. 86). Harvard university press.

Wang, F. (2018, April). A Comparative Study on Mental Health Status between Freshmen and Senior Students. In *2018 4th International Conference on Education Technology, Management and Humanities Science (ETMHS 2018)* (pp. 380-384). Atlantis Press.

Werner, A.M., Tibubos, A.N., Rohrmann, S., & Reiss, N. (2019). The clinical trait self-criticism and its relation to psychopathology: A systematic review-Update. *Journal of affective disorders*, *246*, 530-547. https://doi.org/10.1016/j.jad.2018.12.069

Wu, R., Jing, L., Liu, Y., Wang, H., Xie, L., & Deng, W. (2023). Effects of mindfulness on obligatory exercise during the return of injured athletes to sports: The mediating roles of self-criticism and competitive state anxiety. Psychology Research and Behavior Management, 2157-2171. https://doi.org/10.2147/PRBM.S414709

Yang, J., Peek-Asa, C., Corlette, J.D., Cheng, G., Foster, D.T., & Albright, J. (2007). Prevalence of and risk factors associated with symptoms of depression in competitive collegiate student athletes. *Clinical journal of sport medicine*, *17*(6), 481-487.

Yip, T., Gee, G.C., & Takeuchi, D.T. (2008). Racial discrimination and psychological distress: The impact of ethnic identity and age among immigrant and United States-born Asian adults. *Developmental Psychology, 44*, 787-800. doi:10.1037/0012-1649.44.3.787

Zaccari, V., Mancini, F., & Rogier, G. (2024). State of the art of the literature on definitions of self-criticism: a meta-review. Frontiers in Psychiatry, 15, 1239696.

---

*Manuscript submitted August 2024.Accepted for publication April 2025.*