

The Relationship Between Psychiatric Symptom Severity and Positive and Negative Experiences with Sport Culture Among Collegiate Athletes

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Although mental health professionals have expressed interest in understanding the relationship between sport culture and mental health, this relationship has yet to be examined psychometrically. In this study, the Semi-Structured Interview for Consideration of Sport Culture in Therapy Scale (SSICSCTS; see Donohue et al., 2006) was administered to 59 collegiate athletes. The SSICSCTS examines positive (Sport Culture Importance Scale; SCIS) and negative (Sport Cultural Problems Scale; SCPS) experiences with sport culture. Participants were also assessed for psychiatric symptomology using the Symptom Checklist 90-Revised (SCL-90-R; Derogatis, 1994). MANOVA results indicated no significant differences between NCAA and Club athletes on SCIS or SCPS scores. As hypothesized, regression analysis revealed SCPS scores significantly predicted SCL-90-R Global Severity Index (GSI) scores, while SCIS was not a significant predictor. These findings suggest negative experiences with sport culture may contribute to poor mental health outcomes and should be considered during the implementation of mental health programs for athletes.

Keywords: Sport Culture, Assessment, Mental Health, Psychiatric Symptoms, Athlete

In the United States, approximately half a million athletes participate in the National Collegiate Athletic Association (NCAA), while more than 2 million college students compete in Club sports (Pennington, 2008). Outside the United States, most college athletes participate in either intramural or club sports, while Canadian collegiate students participate in U Sports, Canada's equivalent of the NCAA. At the college level in the United States, students can participate in three levels of organized sport (i.e., National Collegiate Athletics Association or NCAA, club, intramural). Collegiate athletes on college campuses share some similarities but also have distinct differences. At the NCAA level, for instance, prospective collegiate athletes are typically recruited with incentives, such as athletic scholarships or, less often, the ability to earn money through "Name, Image, Likeness" (NIL) campaigns. Although prospective collegiate athletes at the club level can still be recruited to academic institutions, there are no athletic scholarships awarded to them, as this level is traditionally organized outside the respective school's athletic department (Dahab et al., 2019). Club sports are funded through fundraising campaigns, annual member dues, and donations. There are exceptions where some club teams are fully funded either through the university or through fundraising efforts and donations. Compared to NCAA funded athletics, club level athletes typically pay for sport equipment and other expenses associated with their sport, including but not limited to their travel and staff salaries. Intramural sports offer college students of all skill levels a cost-effective way to compete in organized leagues with flexible schedules compared to NCAA or club athletes. They provide opportunities for physical activity, social connection, and enjoyment, making sport participation accessible without the pressures of higher-level competition (Cooper et al., 2012).

Participation in collegiate sport occurs within distinct social environments that shape shared values and beliefs. Along these lines, culture involves a set of values, ideas, and beliefs shared by a group of people (Velasquez et al., 1994) and is a critical component of what shapes human experience throughout life (Thomas, 2001). As defined by Barkan (2016), culture includes symbols, language, beliefs, values, and artifacts that are part of a specified society. Furthermore, it is how individuals receive, organize, rationalize, and understand their experiences in the world (Saleebey, 1994). As individuals identify with a specific culture or groups of cultures, they embody a cultural identity. Chen and Lin (2016) describe cultural identity as the active process through which individuals engage in and negotiate their sense of belonging within social groups depending on context. They further emphasize that the ways individuals experience as well as express intersecting cultural identities can shift according to contextual factors, such as the environment, specific situations, and the people involved.

With culture manifesting itself differently across populations, professionals have consistently indicated their interest in understanding the culture of athletes, particularly as it relates to mental health (Thompson et al., 2001). Elite athletes have been found to experience comparable severity of mental health symptoms relative to the general population (Rice et al., 2016); with mental health concerns most often including anxiety, depression, post-traumatic stress and sleep disorders (Purcell et al., 2019). However, studies have found elite athletes experience better mental health when compared to the general population (Donohue et al., 2004; Grasdalsmoen et al., 2022). Therefore, there appears to be heterogeneity of mental health prevalence rates among athletes in comparison to non-athlete populations (Ekelund et al., 2022; Gouttebauge et al., 2019).

Sport culture can be understood through Barkan's framework. In this framework, culture includes specific symbols. For instance, a logo can be an object of symbolism that represents an

athlete's team or organization. The logo is a symbol or visual representation of what the culture of the team or organization represents.

In sports, some terms are universally understood. For instance, in basketball, the word "shoot" can be universally understood even in situations where athletes speak different languages. Athletes also may use slang words that are idiosyncratic to their respective sport (e.g., in baseball "hitting the ball out of the park"). Norms are standards and expectations for behavior and are often encouraged within the sport industry through contracts at the amateur, collegiate, and professional levels (Bayramklichevna & Okyulov, 2022). Rituals that occur across time may become normative, such that athletes may perform them over generations (e.g., warming up together, team cheers, hazing). Athletes may have routines that they perform individually to prepare for practices and games, or rituals that are consistent across sport culture. Values contribute to the development of norms and involve judgments of what is good or bad and desirable or undesirable. Values that are particularly relevant to sport include fair play, sportsmanship, respect, and community.

These aspects of culture may contribute to athletes' mental health (Scotto di Luzio et al., 2019) through friendships and social relations (Dalen & Seippel, 2021). For instance, participating under a logo or participating in traditions that are universally considered positive (e.g., pre-game or post-game meals, post-game celebrations, team building activities) often facilitates relationship building. In contrast, some aspects of sport culture may be harmful. For instance, symbols such as team logos, team names, and team mascots (e.g., Cleveland Indians, Washington Redskins, Fighting Sioux) have been changed to eliminate the possibility of being perceived as offensive. Along this vein, context is important in the consideration of these changes (e.g., Native Americans have historically faced oppression).

Another example of sport culture that is unhealthy concerns the phenomena of hazing. According to the NCAA, hazing is considered any act committed against someone becoming a member or maintaining membership in an organization that is humiliating, intimidating or demeaning, or endangering the health and safety of the person. Hazing can involve active or passive engagement in harmful behaviors regardless of an individual's willingness, creating a climate that undermines personal dignity and respect (NCAA, 2020). Diamond et al (2015) suggest physical forms of hazing include beating/paddling, branding, burning, tattooing, calisthenics, head shaving, kidnapping, abandonment, and sexual assaults. Psychological forms of hazing include forced embarrassing acts, wearing embarrassing clothes or makeup, being verbally abused, deprived of both sleep and food, being tied or taped up, and being forced to do whatever the hazer asks of them. Alcohol use associated hazing includes forced drinking. Hazing has led to both short-term and long-term physical and mental health problems in athletes (Chang et al., 2019).

Building on these experiences, another foundational aspect of sport culture is athletic identity, which involves the extent to which the role of being an athlete is perceived (Brewer, 1993). Individuals with a strong athletic identity base their self-worth on sport outcomes (Weinberg, Vernau, & Horn, 2013). Therefore, athletes who strongly identify with their sport may experience negative mental health consequences when aspects of their sport environment are disrupted. For example, athletes who receive scholarships and rely on structured schedules for training, competition, and daily life may experience distress if these supports are suddenly removed (Hollabaugh et al., 2023). These aspects of sport culture may also affect athletes' attitudes toward mental health and help-seeking. There are inherent differences in being an athlete that cause stigma when pursuing mental health care, as compared with non-athlete peers

(Watson, 2005). For instance, being a celebrity may compromise confidentiality in their pursuit of mental healthcare, resulting in fear of being judged or treated negatively by others (Montero et al., 2022). Moreover, athletes have traditionally been taught to play through pain, which creates a culture of silence within sport (Richardson et al., 2024).

Sport culture may have an impact on performance and mental health through its interaction with existing personality traits and environmental factors (Chang et al., 2019). For collegiate athletes, the pressures of succeeding both academically and athletically increase their susceptibility to burnout, over-training, and conflicting thoughts. The observed pattern of advancement in sports increases internal and external pressure. Although many collegiate-athletes report that involvement in intercollegiate athletics is rewarding, an increasing number also face challenges related to adjustment, emotional well-being, and psychological distress, often due to their participation in activities that are linked to sport culture (Watson, 2005).

When examining collegiate-athletes at the highest level of collegiate competition in the United States (i.e., the NCAA), 30% of collegiate-athletes reported feeling extremely overwhelmed, and nearly a quarter report significant mental fatigue (NCAA, 2020). Approximately 31% of male and 48% of female collegiate-athletes endorse symptoms of depression or anxiety (Moreland, 2018). In general, it is estimated that between 10% and 15% of collegiate athletes struggle with psychological concerns that warrant professional counseling (Watson & Kissinger, 2007). This prevalence is notably higher than the general student population, according to findings from the 2005 National Survey of Counseling Center Directors (Gallagher, 2005).

Culture has been shown to impact how individuals describe their symptoms to health care providers (Thompson et al., 2001). With the number of hours that athletes spend training, practicing, competing in games, and travelling, it may be difficult to distinguish between typical feelings of fatigue and symptoms of a mental health condition (Gulliver et al., 2012). Athletes may also have trouble acknowledging symptoms of a mental health disorder due to physical and physiological requirements in their sport. For instance, athletes often compete optimally when their weight is relatively high (e.g., defensive lineman in American football) or low (e.g., long-distance runners), which may result in problems associated with unhealthy under- or over-eating (Gulliver et al., 2012). In an NCAA collegiate-athletes sample, researchers found that 25.3% of athletes were classified at risk for eating disorders (Torres-McGehee et al., 2023).

The transition into retirement can expose athletes to potential mental health difficulties, especially when athletic identities are solidified (Jewett et al., 2018). Athletes are often encouraged to dedicate much of their lives to develop athletic identity within the culture of sport, which is lost upon retirement (Lavalley & Robinson, 2007). This is a concern because retirement is sometimes associated with a decline in mental well-being and overall life satisfaction (Haslam et al., 2021), including other negative consequences, such as losing sport-based relationships with coaches and teammates and established routines that are often managed by others. Athletes tend to experience feelings of loss, identity crisis, career regret, and difficulties with abrupt lifestyle modifications during their retirement transition (Voorheis et al., 2023). Therefore, greater athletic identity and immersion within sport culture may contribute to professional, social, and emotional difficulties (Schmid et al., 2023). Recognizing the challenges that sport culture can pose for athletes emphasizes the need for clear tools to measure and understand this complex part of their experience.

Assessments Measuring Sport Culture

Culture is one of the most contested words in the English language (Hawkes, 2001) and has been reported to be difficult to understand and evaluate (Partal & Dunphy, 2016). The Semi-structured Interview for Consideration of Ethnic Culture in Therapy Scale (SSICECTS) and parallel Semi-structured Interview for Consideration in Sport/Exercise Culture in Therapy Scale (SSICSECT) were developed in a controlled trial involving 151 collegiate students (Donohue et al., 2006). The overarching aim of the study was to develop a method of assessing cultural competence in therapy. Both scales include the same question stems and response sets but are focused on either ethnic culture or sport culture, respectively (see Appendix A). The questions are designed to capture interviewees' positive and negative experiences with the respective culture, and the response set is a 7-point scale of agreement (1 = Extremely Disagree, 4 = Unsure, 7 = Extremely Agree). In this initial study, the SSICECTS demonstrated strong factor structure, good internal consistency, and satisfactory convergent validity, whereas the SSICSECT was not examined psychometrically. In the random assignment phase of the study, administration of a corresponding interview that discussed SSICSECT answers resulted in improved perceptions of the interviewers. In a subsequent study, Donohue et al. (2021) examined the SSICECTS in 289 collegiate athletes. Results showed that reviewing the participants' responses, both positive and negative, led to greater mental health intervention engagement. The SSICECTS is highly customizable and able to address unique aspects of sport culture. Item stems are focused on sport culture from the participant's perspective, and interview prompts encourage athletes to discuss symbols, language, norms, rituals, and values that are pertinent to sport culture. For instance, the interviewing format permits a hockey player to talk about sport culture within the context of hockey.

As the previous review indicates, negative experiences with sport culture may contribute to mental health concerns. However, investigators have yet to examine the relationship between sport culture and mental health in athletes using psychometrically validated scales. Therefore, the current study sought to determine whether negative experiences with sport culture predict mental health symptom severity in Club and NCAA athletes. Specifically, it was hypothesized that Sport Culture Problem Scale (SCPS) scores in the SSICECTS, but not Sport Culture Importance Scale scores of this measure, will significantly predict psychiatric symptom severity.

Method

Participants

Participants in this study were collegiate-athletes ($n = 59$) who attended a university in the southwestern United States that is classified as a Division I NCAA institution (see Table 1). Athletes completed a survey to better understand life transitions, performance, perception of various aspects of life, utilization of medical and mental health services, and culture. Eligibility requirements to participate in this study include: (1) at least 18 years of age, and (2) identified as an NCAA or Club athlete.

Table 1
Participant Demographics for Overall Sample

Demographic		
	<i>M</i>	<i>SD</i>
Age in Years	20.6	2.07
	<i>A</i>	<i>%</i>
Gender		
<i>Male</i>	34	57.6
<i>Female</i>	25	42.4
Ethnicity		
<i>White</i>	38	64.4
<i>Hispanic</i>	6	10.1
<i>Asian</i>	7	11.9
<i>Black</i>	4	6.8
<i>Native American</i>	1	1.7
<i>Pacific Islander</i>	1	1.7
<i>Other</i>	2	3.4
Year in School		
<i>Freshman</i>	14	23.7
<i>Sophomore</i>	12	20.3
<i>Junior</i>	15	25.4
<i>Senior</i>	18	30.6
Athlete Type		
<i>NCAA</i>	37	62.7
<i>Club</i>	22	37.3

Note. $N = 59$. λ = frequency.

Measures

Demographic Questionnaire

Participants were asked about demographics, which included gender, ethnicity, age, enrollment status, class standing, and current level of participation in sport.

The Semi-Structured Interview for Consideration of Sport Culture in Therapy Scale (SSICSCTS; see Donohue et al., 2006)

The SSICSCTS includes two subscales. The Sport Culture Importance Scale (SCIS) includes four items that assess the extent to which sport culture is perceived to be important (i.e., My sport culture is a big part of my everyday life; My sport culture is of great importance to me; There are many things I like about my sport culture; My sport culture should be addressed in therapy). The Sport Culture Problem Scale (SCPS) assesses the extent to which problems are perceived to occur due to sport culture (Sport Culture Problem Scale; SCPS). The SCPS includes two items (i.e., Others have said things to me about my sport culture that have been offensive to me; I have experienced problems due to my sport culture). Items are endorsed using a 7-point Likert-type response scale (1 = Extremely Disagree, 7 = Extremely Agree). The SSICSCTS has been successfully utilized to engage athletes in treatment in clinical trials (e.g., Donohue et al., 2021). Internal consistency was evaluated for the current sample using Cronbach's alpha ($\alpha = .78$ for Importance scale; $\alpha = .76$ for Problems scale).

The Symptoms Check-List-90-Revised (SCL-90-R) (Derogatis, 1994)

This 90-item measure is a widely utilized scale for general psychiatric symptoms, which have been normed on psychiatric outpatients, psychiatric inpatients, and adult and adolescent non-patients and has demonstrated acceptable convergent-discriminant validity, internal consistency, and test-retest reliability (see Donohue et al., 2020 for review). The SCL-90-R's reliability and validity have been evaluated in multicultural environments and has been utilized to assess the psychometric characteristics of various screening instruments (Donohue et al., 2023; Martin et al., 2006; Øiesvold et al., 2011; Donohue et al., 2023). Sub-scales assess the following psychiatric symptomology: Somatization, Obsessive Compulsive Disorder, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism. Items (symptoms) are endorsed using a 5-point Likert-type scale (0 = Not at All, 4 = Extremely). The current study will use the GSI for analysis (Todd, Deane & McKenna, 1997).

Procedures

Collegiate athletes (NCAA, Club), who were at least 18 years of age and attending a southwestern university, were included in the proposed analyses. Data were obtained from two sources: (1) a study examining mental health, performance, and culture among military and non-military collegiate students ($n = 24$), and a study conducted to examine mental health, performance and culture in collegiate student-athletes ($n = 35$). Study procedures, including measures, were the same for participants in both studies. However, the method of recruitment varied between these two studies. In the former study, all collegiate students were invited to participate to receive course credit for their participation. In the latter study, NCAA participants

were encouraged through social media, email, text, and instant messaging by their team leaders to complete the study and club athletes were invited through their respective sport listservs.

Participants completed study measures on their own personal devices, and their information was immediately de-identified. The survey was created in Qualtrics, where all information was exported to an SPSS document after the collection of data. To reduce risk of human error and to provide both accurate and valid results through this survey, data was checked for accuracy in research team pairs. The sample size of fifty-nine (59) athletes consisted of thirty-seven (37) NCAA athletes and twenty-two (22) club athletes. The study was approved by the university's Institutional Review Board for the protection of human participants.

Statistical Analysis Plan

It is unclear if NCAA athletes attribute greater importance to their sport culture and experience greater problems due to their sport culture, as compared with athletes in potentially less involved levels of sport participation (i.e., club sports). Indeed, club sports are not as structured in their scheduled activities as NCAA sports, although club and NCAA collegiate athletes both compete in intercollegiate games, practices, and travel to competitions. Therefore, a multivariate analysis of variance (MANOVA) test was planned to determine if NCAA and club athletes (Independent Variable) differed significantly in their Sport Culture Importance Scale scores and Sport Culture Problem Scale scores (Dependent Variables). Post-hoc univariate analyses (ANOVAs) were planned if the omnibus MANOVA was significant between NCAA and club sport athletes on the SCIS and SCPS. If NCAA and Club Sport athlete SCIS and SCPS scores are similar, the primary analysis (i.e., multiple linear regression performed to determine if SCIS and SCPS scores predict SCL-90R GSI scores) was planned to occur combining NCAA and club sport athlete SCIS and SCPS scores. If NCAA and club sport athlete SCIS and SCPS scores were statistically significant, the primary analysis will be done separately for NCAA and club sport athletes. Assumptions of linear regression, including normality, multicollinearity, and homoscedasticity were examined.

Power Analyses

Separate power analyses indicated that a sample size of 68 participants would be required to detect a medium effect size ($f^2(V) = 0.15$) with 80% power at an alpha level of 0.05 for both the proposed MANOVA and linear regression analyses (Faul, Erdfelder, Lang, & Buchner, 2007; Faul, Erdfelder, Buchner, & Lang, 2009). The obtained sample size was 59 participants in the current study, suggesting that both the MANOVA and regression analyses may have been slightly underpowered.

Results

Descriptive Statistics

Raw score means, standard deviations, and standard scores for the SCIS, SCPS and SCL-90-R GSI for NCAA athletes, club athletes, and the combined athlete sample are presented in Table 2. Additionally, NCAA and club sport athletes scored approximately one standard deviation above the normative mean of 50 ($SD = 10$) (clinical cut-off score = 63; Derogatis,

1994) (see Table 2). Twenty-six athletes (15 NCAA and 11 Club) representing 44% of the sample (26/59), met or exceeded the clinical cut-off score.

Table 2

Descriptive Statistics for the SCIS, SCPS, and SCL-90-R GSI by Athlete Type (N=59)

	Athlete Type	n	SCIS	SD	SCPS	SD	SCL-90-R GSI	SD
Mean Raw Score	<i>NCAA</i>	37	5.7	1.12	4.43	1.23	0.74	0.65
	<i>Club</i>	22	5.77	0.89	4.73	1.46	0.85	0.84
	<i>All Athletes</i>	59	5.72	1.04	4.54	1.31	0.78	0.72
Mean Standard Score	<i>NCAA</i>	37	-	-	-	-	58.32	-
	<i>Club</i>	22	-	-	-	-	60.73	-
	<i>All Athletes</i>	59	-	-	-	-	59.22	-

Athlete Status (NCAA & Club) as a Predictor of Sport Culture Perceptions (SCIS & SCPS)

A multivariate analysis of variance (MANOVA) was conducted to determine whether NCAA and club athletes differ significantly in their scores on the Sport Culture Importance Scale (SCIS) and the Sport Culture Problem Scale (SCPS). Athlete status (NCAA vs. Club) served as the independent variable, while SCIS and SCPS scores were the dependent variables. The results of the MANOVA indicated that there was no statistically significant multivariate effect of athlete status on the combined dependent variables, Pillai's Trace = 0.013, $F(2, 56) = 0.356$, $p = .701$. These findings suggest NCAA and club athletes do not differ significantly in the extent to which they believe their sport is important to them or the extent to which they perceive problems due to their sport culture. NCAA and club sport athlete SCIS and SCPS scores were therefore combined for the subsequent primary analysis (described below).

Primary Analysis

Sport Culture Scales (SCIS & SCPS) as Predictors of Mental Health (SCL-90-R GSI) Among Athletes

A linear regression was performed to examine if SCIS (Importance Scale) and SCPS (Problem Scale) scores predict SCL-90-R GSI scores among athletes. The model was statistically significant, $F(2, 56) = 7.114$, $p = 0.0018$, indicating that the predictors explained a sizable proportion of the variance in SCL-90-R GSI scores. The model accounted for 20.26% of the variance ($R^2 = 0.203$, with an adjusted ($R^2 = 0.174$)).

An examination of the individual predictors revealed that SCPS was a significant predictor ($B = 0.247$, $SE = 0.066$, $t = 3.768$, $p < 0.001$), such that higher SCPS scores were associated with higher SCL-90-R GSI scores. However, the SCIS was not a significant predictor ($B = -0.049$, $SE = 0.083$, $t = -0.585$, $p = 0.561$) of SCL-90-R GSI scores.

These results suggest that the SCPS (Problem Scale) is a meaningful contributor to the prediction of mental health outcomes, as measured by the SCL-90-R GSI, while SCIS (Importance Scale) does not appear to have a significant impact by itself.

Discussion

Overview of Findings

The primary aim of this study was to examine the relationship between sport culture and mental health outcomes in a sample of 59 NCAA athletes. There were no significant differences between NCAA and club athletes in the extent to which they perceived their sport culture was important or the extent to which their sport culture was problematic. These findings may suggest that athletes at both levels perceive their sport culture similarly, which may unite NCAA and club sport athletes, despite their structural differences (Paule & Gilson, 2010; Dahab et al., 2019). For example, both groups often navigate the pressures of balancing athletic commitments with academic and personal responsibilities, which may result in similar cultural experiences (Cooper et al., 2012). This finding is also consistent with previous research showing no significant differences in athletic identity across collegiate competitive levels, which suggests athletes may maintain similar identification with the athlete role regardless of their competitive level (Houle, Brewer, & Kluck, 2010).

Regression analyses supported the hypothesis that negative experiences with sport culture would in turn be significantly associated with psychiatric symptom severity, whereas the extent to which sport culture was perceived to be important was not predictive of psychiatric symptom severity. These combined results are important when attempting to appreciate the influence of sport culture on collegiate athletes' mental health. Indeed, the results suggested athletes' negative experiences with sport culture, and not the extent to which they perceive sport culture is important to them per se, should be a primary concern when screening athletes for mental health disorders. This finding is consistent with existing evidence suggesting negative sport culture experiences (i.e., hazing, performance pressures, burnout, and criticism, to name a few) are harmful to athletes' well-being (Rice et al., 2016; Chang et al., 2019; Diamond et al., 2015).

There is also existing evidence suggesting negative sport culture experiences (e.g., hazing, performance pressures, burnout, criticism) may have a harmful impact on athletes' well-being (Rice et al., 2016; Chang et al., 2019; Diamond et al., 2015). Thus, the current findings are consistent with previous research linking negative aspects of sport culture to poorer mental health outcomes and provide meaningful insight into the mental health risks associated with these experiences while challenging assumptions about differences between NCAA and club athletes.

Limitations

Overall, while the power analysis indicated that a sample size of 68 participants was ideal for both the MANOVA and linear regression analyses, the final sample of 59 was influenced by

resource constraints such as limited access to participants. As Lakens (2022) discusses, resource limitations are a common and justifiable reason for smaller sample sizes, especially when the data are interpretable and provide valuable insights. Although the study may be underpowered, the consistency of the findings with previous research on the negative impact of sport culture experiences on mental health suggests that the data offer reliable findings. Furthermore, the observed similarities between NCAA and Club athletes align with existing evidence that their experiences may be more alike than often assumed. Morgan and VanVoorhis (2007) suggest that support from previous studies can lend credibility to findings, even in underpowered studies.

It is important to mention that mean SCL-90-R scores were relatively high (mean = 59.22; clinical cut-off 63) for athletes in this study. In considering these scores, it is important to appreciate that athletes experience idiosyncratic stressors, such as performance pressures, intensive training demands, and public criticism (Reardon, 2023; Rice et al., 2016; Gulliver et al., 2012; Chang et al., 2019). However, there were no differences between athletes and non-athletes in this study, and the timing of this study was partially conducted during the COVID-19 pandemic when mental health symptom severity was relatively high nationwide. For instance, 60% of college students were determined to evidence at least one mental health problem (Healthy Minds Study; Lipson et al., 2022), and almost three-quarters of collegiate students reported Moderate to Severe psychological distress (National College Health Assessment, American College Association, 2021), during the time of the current study. Thus, study generalizability may have been compromised by COVID-19, or the relatively small number of participants in the study.

Although the Semi-Structured Interview for Consideration of Sport Culture in Therapy Scale (SSICSCTS) shows promise for assessing athletes' experiences within sport culture, its validation remains relatively limited. For instance, as with many self-report measures, responses may have been influenced by social desirability bias. Indeed, sport environments often emphasize toughness and resilience, which may discourage athletes from reporting negative experiences or psychological symptoms due to fear of appearing "weak" (Reardon, 2023; Watson, 2005). Supporting the argument that social desirability was not a concern in this study, participants reported relatively high mental health symptom severity.

Lastly, it is important to note that the cross-sectional design of the study limits causal inference about the relationship between sport culture problems and mental health outcomes. All variables were measured at a single time point. Therefore, the direction of the relationship between these variables may not be fully determined (Capili, 2021). Cross-sectional studies are useful for examining associations among variables within a population and may help guide the development of future longitudinal research approaches (Capili, 2021).

Clinical Implications

The meaningful relationship between perceived sport cultural problems and psychological distress underscores the need for targeted interventions aimed at reducing negative aspects of sport culture. Strategies such as psychoeducation, mental health workshops, and promoting open environments where seeking help is encouraged have been recommended by others (Chang et al., 2019; Watson & Kissinger, 2007). One such program that embodies these principles is The Optimum Performance Program in Sports (TOPPS), a sport-specific cognitive-behavioral intervention adapted from Family Behavior Therapy, shown to optimize both mental health and athletic performance (Donohue & Perry, 2022). TOPPS consists of structured, athlete-

driven interventions that address various aspects of performance and well-being, while emphasizing structured assessments of sport culture (Donohue et al., 2018), including the Semi-Structured Interview for Consideration of Sport Culture in Therapy Scale (SSICSCTS). Relevant to clinical utility along these lines, the SSICSCTS has been used successfully to engage athletes into mental health programming (Donohue et al., 2021).

In summary, the present study contributes to the growing literature examining mental health in collegiate athletes by demonstrating that negative perceived experiences with sport culture are associated with greater psychological distress. While the perceived importance of sport culture itself was not related to mental health outcomes, negative experiences with sport culture affect athletes' psychological well-being. These findings highlight the importance of assessing athletes' experiences within their sport environments when evaluating mental health concerns. Future research with larger samples is needed to further clarify the direction of these relationships and to expand validation of the SSICSCTS. Further research may help inform interventions that improve both athlete well-being and sport culture. The results of this study suggest the SSICSCTS warrants potential examination as a non-stigmatizing method of identifying mental health concerns in athletes.

References

- Barkan, S. E. (2016). Sociology: Understanding and changing the Social World. *Sociology, Understanding and Changing the Social World*. <https://doi.org/10.24926/8668.2401>
- Bayramklichevna, D., & O. Okyulov. (2022). Issues related to the regulation of sports contracts in civil law. *Zien Journal of Social Sciences and Humanities*, 8, 197–200. <https://zienjournals.com/index.php/zjssh/article/view/1810>
- Brewer, B. W., Van Raalte, J. L., & Linder, D. E. (1993). Athletic identity: Hercules' muscles or Achilles heel? *International Journal of Sport Psychology*, 24(2), 237–254.
- Chang, C., Putukian, M., Aerni, G., Diamond, A., Hong, G., Ingram, Y., Reardon, C. L., & Wolanin, A. (2019). 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. *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*, 54(4), 216–220. <https://doi.org/10.1136/bjsports-2019-101583>
- Capili, B. (2021). Cross-sectional studies. *AJN, American Journal of Nursing*, 121(10), 59–62. <https://doi.org/10.1097/01.naj.0000794280.73744.fe>
- Chen, Y.-W., & Lin, H. (2016). Cultural identities. *Oxford Research Encyclopedia of Communication*. <https://doi.org/10.1093/acrefore/9780190228613.013.20>
- Cooper, N., Schuett, P. A., & Phillips, H. M. (2012). Examining intrinsic motivations in campus Intramural sports. *Recreational Sports Journal*, 36(1), 25–36. <https://doi.org/10.1123/rsj.36.1.25>
- Dahab, K., Potter, M. N., Provance, A., Albright, J., & Howell, D. R. (2019). Sport specialization, Club Sport Participation, quality of life, and injury history among high school athletes. *Journal of Athletic Training*, 54(10), 1061–1066. <https://doi.org/10.4085/1062-6050-361-18>

- Dalen, H. B., & Seippel, Ø. (2021). Friends in sports: Social Networks in leisure, school and Social Media. *International Journal of Environmental Research and Public Health*, 18(12), 6197. <https://doi.org/10.3390/ijerph18126197>
- Derogatis L.R. (1994). *SCL-90-R: Administration, scoring and procedures manual* (3rd ed.). Minneapolis, MN: NCS Pearson.
- Diamond, A. B., Callahan, S. T., Chain, K. F., & Solomon, G. S. (2015). Qualitative Review of hazing in collegiate and school sports: Consequences from a lack of culture, knowledge and responsiveness. *British Journal of Sports Medicine*, 50(3), 149–153. <https://doi.org/10.1136/bjsports-2015-095603>
- Donohue, B., Dickens, Y., Lancer, K., Covassin, T., Hash, A., Miller, A., & Genet, J. (2004). Improving athletes' Perspectives of Sport Psychology Consultation. *Behavior Modification*, 28(2), 182–193. <https://doi.org/10.1177/0145445503259399>
- Donohue, B., Dickens, Y., Lancer, K., Covassin, T., Hash, A., Miller, A., & Genet, J. (2007). Development and psychometric evaluation of the Sport Interference Checklist. *Behavior Modification*, 31(6), 937–957. <https://doi.org/10.1177/0145445507303827>
- Donohue, B., Gavrilova, Y., Galante, M., Gavrilova, E., Loughran, T., Scott, J., Chow, G., Plant, C. P., & Allen, D. N. (2018). Controlled evaluation of an optimization approach to mental health and sport performance. *Journal of Clinical Sport Psychology*, 12(2), 234–267. <https://doi.org/10.1123/jcsp.2017-0054>
- Donohue, B., Gavrilova, E., Danlag, A., Perry, J. Phillips, C., Allen, D. A., & Benning, S. (2021). A comprehensive examination of collegiate athletes' utilization of psychological assessment and intervention services. *Psychology in the Schools*, 58(3), 458–474. <https://doi.org/10.1002/pits.22458>
- Donohue, B., & Perry, J. (2022). *Athlete Mental Health and Performance Optimization* (1st ed.). Academic Press.
- Donohue, B., Galante, M., Maietta, J., Lee, B., Paul, N., Perry, J. E., Gavrilova, Y., & Allen, D. N. (2020). Empirical development of a screening method to assist mental health referrals in collegiate athletes. *Journal of Clinical Sport Psychology*, 13(4), 561–579. <https://doi.org/10.1123/jcsp.2018-0070>
- Donohue, B., Scott, J., Goodwin, G., Barchard, K. A., Bohall, G., & Allen, D. N. (2023). Initial examination of the mental health disorders: Screening Instrument for athletes. *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1029229>
- Donohue B., Strada M. J., Rosales R., Taylor-Caldwell A., Hise D., Ahman S., Lefforge N. L., Kopof M., Devore G., Soares B., Radkovich B., Laino R. (2006). The semistructured interview for consideration of ethnic culture in therapy scale. *Behavior Modification*, 30(6), 867–891. <https://doi.org/10.1177/0145445505276096>
- Ekelund, R., Holmström, S., & Stenling, A. (2022). Mental health in athletes: Where are the treatment studies? *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.781177>
- 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(2), 175–191. <https://doi.org/10.3758/BF03193146>
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41(4), 1149–1160. <https://doi.org/10.3758/BRM.41.4.1149>
- Gallagher, R.P. (2005). *National survey of counseling center directors*. Alexandria, VA:

- International Association of Counseling Services.
- Gouttebauge, V., Castaldelli-Maia, J. M., Gorczynski, P., Hainline, B., Hitchcock, M. E., Kerkhoffs, G. M., Rice, S. M., & Reardon, C. L. (2019). Occurrence of mental health symptoms and disorders in current and former elite athletes: A systematic review and meta-analysis. *British Journal of Sports Medicine*, 53(11), 700–706. <https://doi.org/10.1136/bjsports-2019-100671>
- Grasdalsmoen, M., Clarsen, B., & Sivertsen, B. (2022). Mental health in elite student athletes: Exploring the link between training volume and mental health problems in Norwegian College and university students. *Frontiers in Sports and Active Living*, 4. <https://doi.org/10.3389/fspor.2022.817757>
- Gulliver, A., Griffiths, K. M., & Christensen, H. (2012). Barriers and facilitators to mental health help-seeking for young elite athletes: A qualitative study. *BMC Psychiatry*, 12(1). <https://doi.org/10.1186/1471-244x-12-157>
- Haslam, C., Lam, B. C. P., Yang, J., Steffens, N. K., Haslam, S. A., Cruwys, T., Boen, F., Mertens, N., De Brandt, K., Wang, X., Mallett, C. J., & Fransen, K. (2021). When the final whistle blows: Social Identity Pathways Support Mental Health and Life Satisfaction after retirement from competitive sport. *Psychology of Sport and Exercise*, 57, 102049. <https://doi.org/10.1016/j.psychsport.2021.102049>
- Hawkes J. (2001). The fourth pillar of sustainability: culture's essential role in public planning. Commissioned by the Cultural Development Network. Melbourne: Common Ground.
- Hollabaugh, W. L., Jeckell, A. S., & Diamond, A. B. (2023). Name, image, and likeness and the health of the young athlete: A call to action for sports medicine providers and the Athletic Healthcare Network. *Sports Health: A Multidisciplinary Approach*, 16(2), 209–212. <https://doi.org/10.1177/19417381231212645>
- Houle, J. L. W., Brewer, B. W., & Kluck, A. S. (2010). Developmental trends in athletic identity: A two-part retrospective study. *Journal of Sport Behavior*, 33(2), 146–159.
- Jewett, R., Kerr, G., & Tamminen, K. (2018). University Sport Retirement and Athlete Mental Health: A narrative analysis. *Qualitative Research in Sport, Exercise and Health*, 11(3), 416–433. <https://doi.org/10.1080/2159676x.2018.1506497>
- Lavallee, D., & Robinson, H. K. (2007). In pursuit of an identity: A qualitative exploration of retirement from women's Artistic Gymnastics. *Psychology of Sport and Exercise*, 8(1), 119–141. <https://doi.org/10.1016/j.psychsport.2006.05.003>
- Lipson, S. K., Zhou, S., Abelson, S., Heinze, J., Jirsa, M., Morigney, J., Patterson, A., Singh, M., & Eisenberg, D. (2022). Trends in college student mental health and help-seeking by Race/ethnicity: Findings from the National Healthy Minds Study, 2013–2021. *Journal of Affective Disorders*, 306, 138–147. <https://doi.org/10.1016/j.jad.2022.03.038>
- Martin, A., Rief, W., Klaiberg, A., & Braehler, E. (2006). Validity of the brief patient health questionnaire mood scale (PHQ-9) in the general population. *General Hospital Psychiatry*, 28(1), 71–77. <https://doi.org/10.1016/j.genhosppsych.2005.07.003>
- Montero, A., Stevens, D., Adams, R., & Drummond, M. (2022). Sleep and mental health issues in current and former athletes: A mini review. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.868614>
- Moreland, J. J., Coxe, K. A., & Yang, J. (2018). Collegiate Athletes' Mental Health Services Utilization: A systematic review of conceptualizations, operationalizations, facilitators, and barriers. *Journal of Sport and Health Science*, 7(1), 58–69. <https://doi.org/10.1016/j.jshs.2017.04.009>

- Morgan, C. J. (2017). Use of proper statistical techniques for research studies with small samples. *American Journal of Physiology-Lung Cellular and Molecular Physiology*, 313(5), L873–L877. <https://doi.org/10.1152/ajplung.00238.2017>
- Morgan, B. L., & VanVoorhis, C. R. W. (2007). Understanding power and rules of thumb for determining sample sizes. *Tutorials in Quantitative Methods for Psychology*, 3(2), 43-50. <https://doi.org/10.20982/tqmp.03.2.p043>
- National Collegiate Athletics Association [NCAA]. (2020). *NCAA GOALS Study*. <https://www.ncaa.org/sports/2013/11/20/ncaa-goals-study.aspx>
- Øiesvold, T., Bakkejord, T., & Sexton, J. A. (2011). Concurrent validity of the health of the nation outcome scales compared with a patient-derived measure, the symptom checklist-90-revised in out-patient clinics. *Psychiatry Research*, 187(1–2), 297–300. <https://doi.org/10.1016/j.psychres.2010.10.023>
- Partal, A., & Dunphy, K. (2016). Cultural impact assessment: A systematic literature review of current methods and practice around the world. *Impact Assessment and Project Appraisal*, 34(1), 1–13. <https://doi.org/10.1080/14615517.2015.1077600>
- Paule, A. L. & Gilson, T. A. (2010). Current collegiate experiences of big-time, non-revenue, NCAA athletes. *Journal of Intercollegiate Sport*, 3, 333-347.
- Pennington, B. (2008). Rise of college Club teams creates a whole new level of success. *The New York Times*, 11.
- Purcell, R., Gwyther, K., & Rice, S. M. (2019). Mental health in elite athletes: Increased awareness requires an early intervention framework to respond to athlete needs. *Sports Medicine - Open*, 5(1). <https://doi.org/10.1186/s40798-019-0220-1>
- Reardon, C. L. (2023). The Mental Health Crisis in sports: The perfect storm of contemporary factors. *Journal of Athletic Training*, 58(9), 677–680. <https://doi.org/10.4085/1062-6050-0484.22>
- Reinert, M., Nguyen, T., & Fritze, D. (2025). *The state of mental health in America 2025*. Mental Health America.
- Rice, S. M., Purcell, R., De Silva, S., Mawren, D., McGorry, P. D., & Parker, A. G. (2016). The Mental Health of Elite Athletes: A Narrative Systematic Review. *Sports Medicine*, 46(9), 1333–1353. <https://doi.org/10.1007/s40279-016-0492-2>
- Rice, S. M., Parker, A. G., Mawren, D., Purcell, R., & McGorry, P. D. (2020). Preliminary psychometric validation of a brief screening tool for athlete mental health among male elite athletes: The Athlete Psychological Strain Questionnaire. *International Journal of Sport and Exercise Psychology*, 18(6), 850–865. <https://doi.org/10.1080/1612197X.2019.1611900>
- Richardson, B., Long, S., Walker, J., Reinke, W., Reilly, I., Baker, J., & Basurto, S. (2024). *Stigma threatens to silence athletes struggling with Mental Health*. UNC Media Hub. <https://mediahub.unc.edu/stigma-threatens-silence-athletes-struggling-mental-health/>
- Rosenman, R., Tennekoon, V., & Hill, L. G. (2011). Measuring bias in self-reported data. *International Journal of Behavioural and Healthcare Research*, 2(4), 320. <https://doi.org/10.1504/ijbhr.2011.043414>
- Saleebey, D. (1994). Culture, theory, and narrative: The intersection of meaning. *Social Work*, 39(4), 351. <https://www.proquest.com/scholarly-journals/culture-theory-narrative-intersection-meaning/docview/215267699/se-2>
- Schmid, J., Conzelmann, A., Engel, R., Kuettel, A., & Schmid, M. J. (2023). Retirement from Elite Sport and self-esteem: A longitudinal study over 12 years. *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1176573>

- Scotto di Luzio, S., Isoard-Gautheur, S., Ginoux, C., & Sarrazin, P. (2019). Exploring the relationship between sense of community and vigor in Workplace Community: The role of needs satisfaction and physical activity. *Journal of Community Psychology*, 47(6), 1419–1432. <https://doi.org/10.1002/jcop.22195>
- Thomas, N. D. (2001). The importance of culture throughout all of life and beyond. *Holistic Nursing Practice*, 15(2), 40–46. <https://doi.org/10.1097/00004650-200101000-00007>
- Thompson, T. G. (2001). Chapter 2 Culture Counts: The Influence of Culture and Society on Mental Health. In *Mental Health: Culture, Race, and Ethnicity*. essay, Center for Mental Health Services (US); National Institute of Mental Health (US). <https://www.ncbi.nlm.nih.gov/books/NBK44249/#>
- Todd, D. M., Deane, F. P., & McKenna, P. A. (1997). Appropriateness of SCL-90-R adolescent and adult norms for outpatient and nonpatient college students. *Journal of Counseling Psychology*, 44(3), 294–301. <https://doi.org/10.1037/0022-0167.44.3.294>
- Torres-McGehee, T. M., Uriegas, N. A., Hauge, M., Monsma, E. V., Emerson, D. M., & Smith, A. B. (2023). Eating disorder risk and pathogenic behaviors among collegiate student-athletes. *Journal of Athletic Training*, 58(10), 803–812. <https://doi.org/10.4085/1062-6050-0539.22>
- Velasquez J., Vigil M., Benavides E. (1994). *A framework for establishing social work relationships across racial/ethnic lines*. In: Compton B, Galaway B, eds. *Social Work Processes*. Pacific Grove, CA: Brooks/Cole; 1994:172–176.
- Voorheis, P., Silver, M., & Consonni, J. (2023). Adaptation to life after sport for retired athletes: A scoping review of existing reviews and programs. *PLOS ONE*, 18(9). <https://doi.org/10.1371/journal.pone.0291683>
- Watson, J. C., & Kissinger, D. B. (2007). Athletic participation and wellness: Implications for counseling college student-athletes. *Journal of College Counseling*, 10, 153–162. [doi:10.1002/j.2161-1882.2007.tb00015.x](https://doi.org/10.1002/j.2161-1882.2007.tb00015.x)
- Watson, J. C. (2005). College student-athletes' attitudes toward help-seeking behavior and expectations of counseling services. *Journal of College Student Development*, 46, 442–449.
- Weinberg, R. S., Vernau, D., & Horn, T. (2013). Playing through pain and injury: Psychosocial considerations. *Journal of Clinical Sport Psychology*, 7, 41–59. doi:10.1123/jcsp.7.1.41

Appendix A

Semi-Structured Interview for Consideration of Sport Culture in Therapy Scale (SSICSCTS)

Instructions: For each of the statements below, select the response that is most consistent with your level of agreement or disagreement.

1. My sport culture is a big part of my everyday life.
 - Extremely disagree

- Very much disagree
 - Somewhat disagree
 - Undecided or not sure
 - Somewhat agree
 - Very much agree
 - Extremely agree
2. My sport culture is of great importance to me.
- Extremely disagree
 - Very much disagree
 - Somewhat disagree
 - Undecided or not sure
 - Somewhat agree
 - Very much agree
 - Extremely agree
3. There are many things that I like about my sport culture
- Extremely disagree
 - Very much disagree
 - Somewhat disagree
 - Undecided or not sure
 - Somewhat agree
 - Very much agree
 - Extremely agree
4. Others have said things about my sport culture that have been offensive/rude to me.
- Extremely disagree
 - Very much disagree
 - Somewhat disagree
 - Undecided or not sure
 - Somewhat agree

- Very much agree
 - Extremely agree
5. I have experienced arguments or problems with others due to my sport culture.
- Extremely disagree
 - Very much disagree
 - Somewhat disagree
 - Undecided or not sure
 - Somewhat agree
 - Very much agree
 - Extremely agree
6. If I were pursuing intervention, I would want the professional to address, or ask me about, my sport culture.
- Extremely disagree
 - Very much disagree
 - Somewhat disagree
 - Undecided or not sure
 - Somewhat agree
 - Very much agree
 - Extremely agree