



## The Pre-Performance Ritual: A Recipe for Success or a Path to Burnout?

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*The mental well-being of athletes is a topic of continual discussion due to the rising pressures to succeed and strive for perfection. The present study surveyed 178 National Collegiate Athletic Association (NCAA) Division I collegiate athletes in order to determine risk factors associated with ritualistic and superstitious behaviors in relation to athlete burnout. Collegiate athletes completed the Athlete Burnout Questionnaire (ABQ), Sports Ritual Scale (SRS) and the anxiety subscale of the Depression, Anxiety and Stress Scale - 21 (DASS-21). Results showed anxiety as a mediator in the relationship between sport rituals and burnout, indicating that ritualistic behaviors were not detrimental to athletes unless they also reported high levels of anxiety. The added component of anxiety predisposes athletes that engage in ritualistic behaviors to burnout. Implications of this study reinforce the importance of following recommended NCAA best practices for mental health and specifically the need to educate athletes, coaches and trainers on the impact that sport ritualistic behaviors can have on collegiate athletes' well-being, specifically athletes prone to anxiety, in order to prevent burnout.*

*Keywords: college athlete, rituals, burnout, sport performance, anxiety, ABQ, DASS-21*

**O**f the approximately 8 million high school students competing in athletics, about 186,000 will earn a coveted spot on a Division I roster (Irick, 2019). The competitive drive, perfectionism, and rigid focus on performance that often earns interscholastic athletes the opportunity to compete at the Division I level may also put this population at-risk for mental health and performance issues during their collegiate career. Furthermore, the number and intensity of physical and psychosocial stressors intensifies during the transition to the collegiate level, adding to this risk (Gayles & Baker, 2015). Davorean and Hwang (2015) reported that 31-48% of collegiate athletes reported feelings of overwhelming anxiety. Without appropriate coping skills, intervention or management, the environmental stressors combined with the psychology of the collegiate athlete could lead to breakdowns in mental health (Nicholls et al., 2016; Madigan et al., 2020). Therefore, a thorough understanding of the warning signs of anxiety and a clear pathway to destigmatized intervention is central to maintaining the health of collegiate athletes.

Research suggests athletes' superstitious behaviors are viewed as a routine part of the athletic culture, masking a potential anxiety disorder and potentially preventing athletes from seeking proper care (Cromer et al., 2017). Many coaches and athletes identify perfectionism in athletes, including rigid pre-performance rituals and behaviors, as a positive attribute (Gustafsson & Lundqvist, 2016). Coaches often conceptualize perfectionistic athletes as having paramount and exceptional goals, being heavily committed, always being on time, striving not to make mistakes, and consistently putting forth maximum effort (Gustafsson & Lundqvist, 2016). Although these behaviors are viewed as normative for competitive athletes, they may negatively impact sport performance and debilitate overall mental health. Perfectionism is known to be one the main contributors of psychological distress (Tashman et al., 2010) which is often discounted by coaches and athletes (Yafsson & Lundqvist, 2016); therefore, examining the positive and negative impacts of athletes' rituals, superstitions and behaviors may call attention to treatment modalities to enhance performance and improve mental health for competitive athletes.

According to Cromer et al. (2017), high-performing collegiate athletes (e.g., all-conference) exhibit over-responsibility, perfectionism, superstitions, and a need for control. When athletes obsessively worry about their performance, these tendencies cause distress and may begin to hinder rather than enhance their performance (Cromer et al., 2017). The present study aims to investigate the nature of the relationship between sport rituals, anxiety, and burnout in Division I collegiate athletes. For many athletes, the sense of control over their sport rituals may increase confidence and boost performance (Ofori et al., 2017). However, if the athlete does not feel in control over their pre-performance rituals, and feels that they must perform them or else, the behavior can become detrimental to their sport performance (Bal, 2014). Evaluating the different beliefs, stigmas and characteristics of athletes (i.e., perfectionism in sport, performance enhancing/ inhibiting behaviors) may contribute to a better understanding of ways that athletes can optimize performance and reduce the risks of burnout.

Previous studies have linked anxiety and perfectionism with collegiate athlete burnout (Hill et al., 2010; Cremades et al., 2011). Burnout in collegiate athletes is associated with a wide array of negative outcomes, including early withdrawal from sport, low self-worth, a loss of identity, as well as physical and emotional exhaustion (Appleton et al., 2009; Raedeker, & Smith, 2009; DeFreese & Smith, 2013). Considering the negative impact of burnout on collegiate athlete physical and mental well-being, it is important to understand collegiate athlete behaviors

that may contribute to burnout. Therefore, the goal of this study is to add to the literature on collegiate athlete well-being by examining how sport rituals and superstitious behaviors impact mental health. By investigating the role of anxiety on the relationship between sport ritualistic behavior and burnout, this study aims to shed a light on how these factors may lead to burnout within sport. In turn, we aim to provide guidance on how coaches and athlete support personnel may intervene to help collegiate athletes maintain their mental health and well-being.

### *Ritualistic or Perfectionistic Behaviors in Athletes*

Although findings suggest that it is common for athletes to have increased susceptibility to mental health struggles (e.g., Rao & Hong, 2016; Pluhar et al., 2019; Cutler & Dwyer, 2020), there is limited research to determine the nature of the relationship between collegiate athletes' ritualistic or perfectionistic behaviors in relation to meeting diagnostic criteria for a mental health disorder. For example, Obsessive-Compulsive Disorder (OCD) is an anxiety related disorder that is characterized by repetitive and ritualistic behaviors completed in an attempt to reduce anxiety (Abramowitz et al., 2009). Therefore, if a baseball player engages in a ritualistic behavior such as tapping the bat to each side of the base four times before going up to bat, should such action be viewed as some kind of OCD tendency? Cromer et al.'s (2017) study revealed that 5.2% of college athletes meet the diagnosis of OCD which is over twice the rate of the prevalence of OCD (2.3%) in the general population.

Collegiate athletes may be at greater risk of other anxiety related disorders than the general population potentially due to additional stressors that they face. The pressure to perform at the Division I level, along with natural adrenaline spiking during competition, may increase anxiety inducing, repetitive behaviors (Armstrong & Oomen-Early, 2009). Lang et al. (2015) used techniques to induce anxiety in individuals in order to examine anxiety provoking behaviors, and consequently found an increase in repetitive behaviors. However, collegiate athletes often endorse superstitious behaviors in order to obtain a sense of control within sport, reduce anxiety and improve performance (Ofori et al., 2017). In sum, there are conflicting research findings on whether or not superstitious sport behavior contributes to or minimizes anxiety in athletes.

### *Athletes and Burnout*

Burnout occurs as a response to the demands of one's environment and is characterized by physical and emotional exhaustion, a reduced sense of personal accomplishment, and a devaluation of experiences related to occupation or meaningful activities one engages in (Besèr et al., 2014; Knox et al., 2018). Overtime, burnout often leads to complete withdrawal from sport (Martinent et al., 2016). Research findings suggests that athletes with maladaptive perfectionism (i.e., concerns of meeting expectations) are more likely to experience burnout (Chen et al., 2008). Expectations of collegiate athlete performance standards have continued to rise over the years. In turn, these increased standards lead to expectations of increased time spent practicing, which may lead to burnout (Cremades et al., 2011).

In the current landscape of sports, athletes are specializing in a sport as early as middle school, which can increase the likelihood of unhealthy sport commitment and a unidimensional identify tied to sport performance (Malina, 2010). This early specialization combined with the expectations for these athletes to succeed within their sport raises their anxiety and decreases

their ability to fully enjoy their sport, contributing to burnout (Gould, 2010; Malina, 2010). All of the hours spent practicing in order to improve performance creates physical exhaustion and may become tedious to athletes (Cremades et al., 2011), without adequate amounts of rest to decrease symptoms of burnout (Kellmann, 2010). As expectations and stressors of athletes continue to rise, the social context surrounding the athlete becomes instrumental in preventing burnout. For example, perceptions of support from teammates and coaches, as well as self-determined motivation can help prevent burnout (DeFreese & Smith, 2012). However, without the appropriate support mechanisms, collegiate athletes' vulnerability to negative mental health effects may be increased due to sport related anxiety and burnout.

### *Rituals, Anxiety, and Burnout*

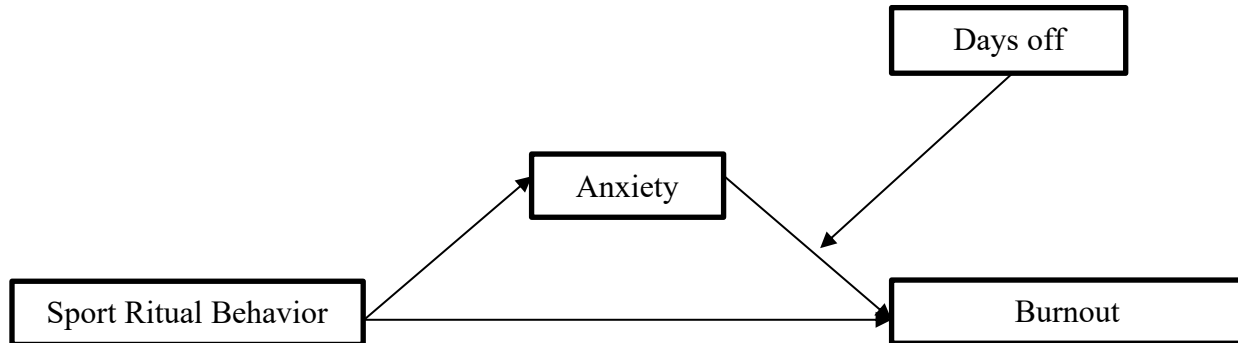
There may be a common denominator amongst athletes' superstitious rituals and anxiety to consider. For some athletes, sport ritual behaviors may be an important performance enhancing component of their pre-performance routine that helps them reach their optimal emotional state prior to competition (Damisch et al., 2010; Ofori et al., 2016). For other athletes, sport ritual behaviors may be an indicator of a clinical problem leading to further distress, perpetuating their anxiety, and increasing their risk of burnout (Cromer et al., 2017). Evaluating the coping mechanisms of athletes (i.e., repetitive, ritualistic, superstitious behaviors) surrounding sport performance may contribute to a greater understanding of specific treatment approaches designed to promote more positive coping strategies among collegiate athletes.

Few case studies have evaluated the role of superstitions and rituals in athletes' pre-performance routines. One study assessed Olympic swimmer Stephanie Rice and their engagement in superstitions on race day. The ritual consisted of swinging their arms eight times, pressing their goggles to their face four times and splashing their body four times (Boyle, 2012). These rituals, in addition to chest, leg and arm slaps, engaging in a jump behind the block, and eating a carbohydrate-loaded dinner the night before the race, are common pre-performance rituals for swimmers (Gustafson, 2014). Research suggests that some athletes engage in time consuming rituals that negatively impact sport performance; however, not all athletes engaging in superstitious routines or rituals are at risk of hurting their performance. According to Burke et al. (2006), some rituals may be beneficial to these athletes' overall performance in sport. Rituals can enhance focus, create a sense of control (Burke et al., 2006), and contribute to a sense of self-efficacy (Feltz et al., 2008). Therefore, if an athlete engages in a superstitious behavior or rituals that positively impacts focus, control or self-efficacy, these rituals may be important for an athlete to manifest their preeminent performance (Wakefield et al., 2017).

The present study examines the conditions under which superstitious, ritualistic and repetitive behaviors impact burnout within sport. Specifically, it appears that some athletes may benefit from sport ritualistic behavior as it primes them for optimal performance, whereas others may feel controlled by a fear driven need to perform specific routines prior to performance. Therefore, the nature of the relationship between sport ritual and burnout is potentially dependent upon the anxiety of the athlete, such that sport rituals lead to burnout for high anxiety athletes.

Empirical evidence supports the idea that athlete anxiety is a major contributor to burnout (e.g., Gomes et al., 2017). Anxious athletes view competition as a threat and are more likely to experience burnout (Goodger et al., 2007). High anxiety has been found to be correlated with a reduced sense of accomplishment which is a key component of burnout (Cremades et al., 2011). Considering the previous literature on the relationship between ritualistic behavior, anxiety, and

burnout, we suggest a model where anxiety is a mediator that is affected by sport rituals and in turn, affects burnout (see Figure 1 for a visual of the model). Overall, this model suggests that the relationship between sport ritual behavior and burnout is completely dependent upon the level of anxiety of the athlete.



*Figure 1.*  
Hypothesized mediated moderation model.

We propose the following hypothesis:

Hypothesis 1: Anxiety mediates the relationship between sport ritual behaviors and burnout.

Additionally, our study evaluates the role of rest days as a buffer in the relationship between anxiety and burnout. Rest days are an important concept for Division I athletic programs and rules and regulations regarding practice days and number of practice hours per week are clearly outlined by the NCAA to prevent athletic departments from requiring too much from their athletes. In short, policies regarding rest days exist in order to prevent burnout and to protect downtime for student-athletes. Rest days, conceptualized as the number of days off an athlete has each month, are typically prescribed to athletes as a buffer to the stressors they experience in sport. Rest days can prevent overuse, injury and overall fatigue from sport (Brenner, 2007; Kroshus & DeFreese, 2017). Conversely, continuously participating in sport practices with no days off is related to overtraining and is a precursor to burnout (Gustafsson et al., 2007; Weinberg & Gold, 2007; Ofori et al., 2017). Days off might mitigate the relationship between anxiety and burnout by providing student-athletes with a brief respite to recover from the physical, emotional and social stressors of sport. These findings lead us to propose our second hypothesis:

Hypothesis 2: Days off moderate the relationship between anxiety and burnout.

Specifically, days off serve as a buffer in the positive relationship between anxiety and burnout.

## Method

### *Participants*

The study participants included 178 Division I collegiate athletes (131 female, 47 male) with a mean age of 19.8 years old ( $SD = 1.4$ ). The majority of participants identified as White (137). The participants, as shown in Table, represented twelve Division I sports, with many student-athletes endorsing cross country/track and field as their primary sport (75) followed by soccer (36) and softball (23).

Table 1

### *Participant Sport and Gender*

Sport	Male	Female	Total
XC/T&F*	30	45	75
Baseball	0	9	9
Swimming	0	7	7
Soccer	2	34	36
Tennis	2	2	4
Football	3	0	3
Baseball	3	0	3
Softball	0	23	23
Volleyball	0	6	6
Golf	3	5	8
Rifle	3	0	3
Water Polo	1	0	1
	47	131	178

*Note.* Cross Country and Track & Field

### *Procedure*

Upon receiving IRB approval, researchers assessed Division I collegiate athletic websites to find head coach email addresses. In instances where head coach email addresses were not shown on the collegiate athletic website, assistant coach email addresses were used. If both head coach and assistant coach email addresses were not listed on the website, athletic advisors emails were used. Emails were sent to coaches and athletic advisors at 50 different Division I schools. Coaches and advisors were then asked to forward the invitation letter directly to their athletes. There was no way to determine if specific coaches and athletic advisors forwarded the emails to the collegiate athletes due to the survey responses being anonymous. The invitation disclosed that all data collected were anonymous and the link to the survey was also included in the invitation letter. All survey questions were administered, and all answers were collected within an online survey tool called CheckMarket. On the first page of the survey, participants were

informed that completion of the survey was voluntary, anonymous, and that they could withdraw from the study at any time without penalty.

We asked participants to provide general demographics (i.e., gender, age, sport, ethnicity) and sport specific information (i.e., practice hours per week, days off per month). In addition, the survey items asked about patterns of ritualistic behaviors and impairment in overall functioning or sport performance due to these behaviors. The measures asked questions pertaining to their feelings around their sport, mental health, and overall well-being with intentions to provide insight into the problematic areas collegiate athletes may face.

### *Measures.*

**Anxiety.** We used 7-items ( $\alpha = .84$ ) from the anxiety subscale of the Depression, Anxiety and Stress Scale (DASS-21; Lovibond & Lovibond, 1995) to assess anxiety in our participants. The participants were asked to indicate how much a particular statement applied to them over the past week. The DASS-21 is scored on a 4-point Likert-type scale from 0 (*did not apply to me at all*) to 3 (*applied to me very much or most of the time*). Higher scores indicate greater severity of symptoms. Sample items include; “I felt scared without any good reason” and “I was aware of dryness in my mouth” (DASS-21; Lovibond & Lovibond, 1995, p. 339) . Items were summed and multiplied by two to obtain an overall anxiety score. Recommended cut-off scores for severity labels are shown in Table 2.

Table 2

#### *DASS-Anxiety Score Ranges for Study Participants*

Rating of Severity	Score	Frequency of Score Range of Participants
Normal	0-7	22
Mild	8-9	38
Moderate	10-14	48
Severe	15-19	26
Extremely Severe	20-42	16

**Sport rituals and superstitions.** The Sports Ritual Scale (SRS; Cepeda et al., 2016) is a 25-item scale designed to assess sport-related ritualistic behavior and the extent to which it occupies the individuals time, interferes with functioning, causes subjective distress, and can be controlled by the individual. The scale items were adapted from the Florida Obsessive-Compulsive Inventory (FOCI; Storch et al., 2007), which is a reliable scale that measures symptoms and severity of OCD. Like the FOCI, the SRS is divided into two subscales: symptom and severity. This study focused on the 8-items ( $\alpha = .84$ ) that made up the SRS severity subscale (e.g., “How strong is the feeling that you have to carry out these rituals”) (SRS; Cepeda et al., 2016). The scale is scored on a four-point Likert scale from 1 (*not at all*) to 4 (*all the time*).

Higher scores indicate greater endorsement of different types and frequencies of rituals before an athletic performance. Sport ritual behavior was measured by the sum of scores of the 8-items.

**Burnout.** Burnout was assessed with the 15-item ( $\alpha = .93$ ) Athlete Burnout Questionnaire (ABQ; Raedeke & Smith, 2001) designed to measure three dimensions of athlete burnout (emotional/physical exhaustion, reduced sense of accomplishment, and sport devaluation). The ABQ is scored on a 5-point Likert-type scale from 1 (*never*) to 5 (*almost always*). Sample items include; “I’m not into my sport like I used to be,” and “I feel overly tired from my sport participation” (ABQ; Raedeke & Smith, 2001, p. 289). Athlete burnout was computed as the mean score on the ABQ measurement.

### Data Analysis

The purpose of this study was to examine the relationships between athlete anxiety, ritualistic behaviors related to sports performance, athlete burnout, and days off from practicing. The survey data were analyzed using SPSS statistical analysis software. Data was checked for extreme outliers and other problematic patterns and retained all participants’ responses. Next, descriptive statistics, reliability estimates, and correlations for all study variables were run. To assess mediation, we used the multi-step regression analysis outline by Baron and Kenny (1986). Finally, we used moderated hierarchical regression analysis (Aiken & West, 1991) to test our moderator hypothesis.

### Results

We report means, standard deviations and correlations between the study variables in Table 2. Our results show that sport ritual behavior is positively related to burnout ( $r = .18, p < .05$ ) and anxiety ( $r = .48, p < .01$ ). The number of rituals that an athlete engages in is not related to burnout ( $r = .12, p = ns$ ) but is related to anxiety ( $r = .41, p < .01$ ). Burnout is positively related to the number of days off an athlete takes in a month ( $r = .23, p < .01$ ).

Table 3  
*Means, Standard Deviations, and Correlations Among Study Variables*

Variable	1	2	3	4	5
1. Burnout	2.52(.75)				
2. Days off	.22**	5.06(2.82)			
3. Sport Ritual Behavior	.18*	.12	7.69(5.28)		
4. Number of Athlete Rituals	.13	.15*	.76**	12.97(9.27)	
5. Anxiety	.49**	.20*	.43**	.41**	12.05(4.78)

*Note.* Means and standard deviations are along the diagonal; \* $p \leq .05$ . \*\* $p \leq .01$ .



We used the steps outlined by Baron and Kenny (1986) to test Hypothesis 1. Using SPSS, we computed three separate regression equations. In Step 1, we entered sport ritual behavior with burnout as the predictor ( $\beta = .18, p < .05$ ). In Step 2, we showed that the sport ritual behavior is correlated with anxiety ( $\beta = .45, p < .01$ ). In Step 3, we entered sport ritual behavior and anxiety in the regression equation with burnout as the criterion variable. In Step 4, we showed that anxiety completely mediates the relationship between sport ritual behavior and burnout ( $\beta = .50, p < .01$ ). When we add anxiety as a mediator in the model illustrated in Figure 1, the path between sport ritual behavior and burnout turned to zero. These results provide support for Hypothesis 1 indicating that anxiety fully mediates the effect of sport ritual behavior on athlete burnout.

We used moderated hierarchical regression analysis (Aiken & West, 1991) to test days off as a moderator between anxiety and burnout. In Step 1, there were significant main effects of anxiety ( $\beta = .45, p < .01$ ) and days off ( $\beta = .17, p < .05$ ) in relation to burnout. In Step 2, we entered the product term of anxiety and days off and found a significant interaction effect ( $\beta = -.46, \Delta R^2 = .02, \Delta F = 3.73, p = .05$ ). However, as illustrated in Figure 2, graphical analysis of the moderating role of days off did not show support for Hypothesis 2.

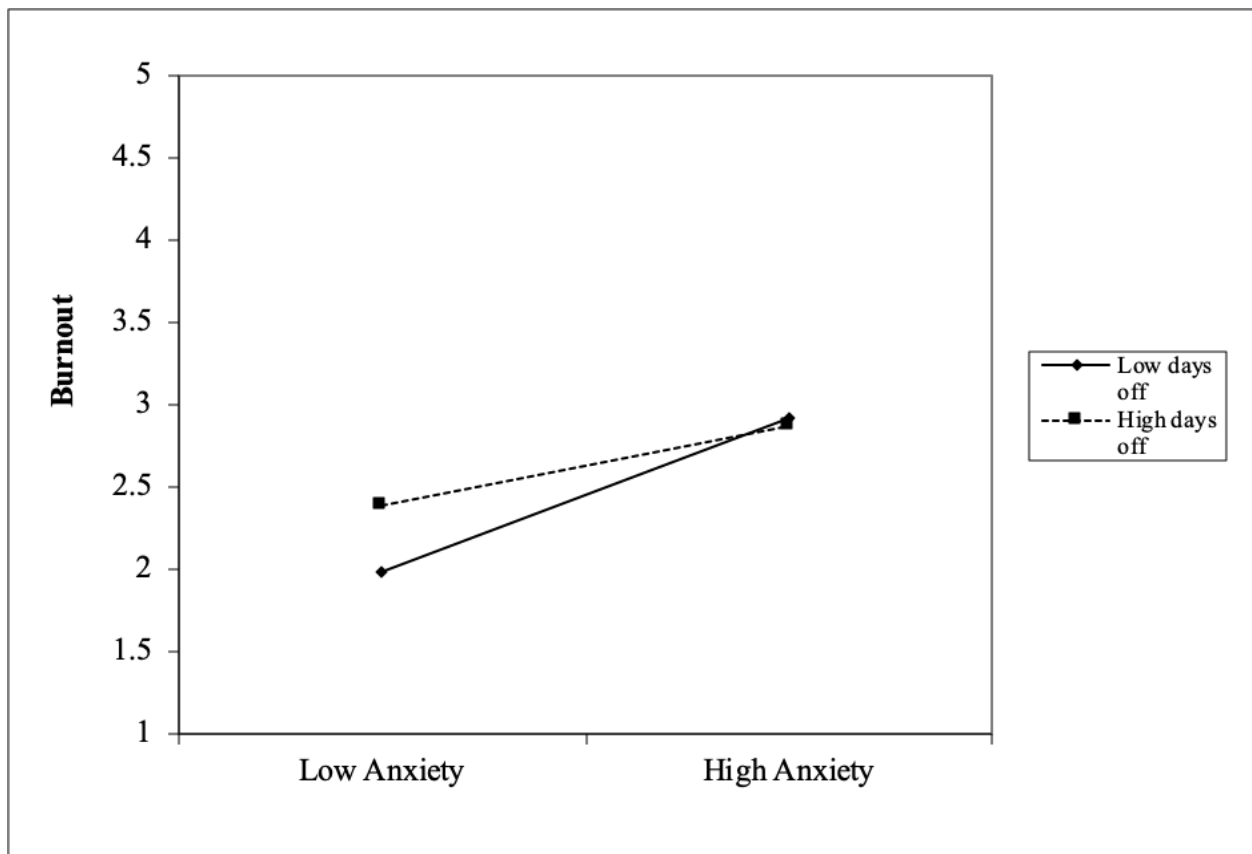


Figure 2.

The moderating effect of days off on the relationship between anxiety and burnout.

## Discussion

Results of this study provide insight into the impact of sport rituals on collegiate athlete well-being. At first glance, athlete burnout appears to be directly impacted by ritualistic behavior in sport. However, when adding anxiety as a mediator, our findings show that this relationship is fully dependent upon anxiety. Specifically, this study shows that sport rituals are particularly harmful for athletes with high levels of anxiety and are related to increases in student-athlete burnout. This is the first study that illustrates how sport rituals may be harmless and even performance enhancing for some athletes (i.e., low anxiety athletes), yet detrimental to the physical and emotional well-being of other athletes (i.e., high anxiety athletes). This study supports previous research that suggests that sport superstitions bring some athletes a sense of control, confidence and peace within their competition (Burke et al., 2006; Ofori et al., 2017), whereas individuals that feel as though they do not have a choice over whether or not to engage in rituals may feel trapped resulting in higher levels of anxiety.

### *Rituals, Anxiety and Burnout*

Our study failed to support the hypothesis that rest days serve as a buffer to burnout among athletes. Contrary to previous literature (e.g., Brenner, 2007; Kroshus & DeFreese, 2017), for athletes with lower levels of anxiety, our results suggest that days off contribute to burnout (i.e., more days off is related to greater levels of burnout). At high levels of anxiety, our results suggest that the number of days off in a month does not impact athlete burnout: both high and low number of days off resulted in similar reported levels of burnout among high anxiety athletes in our sample. This finding raises a couple of additional points. First, days off were positively correlated with burnout, suggesting that days off may be a consequence of burnout (i.e., burned out athletes are taking more days off). Second, days off have no impact on reducing burnout among high anxiety athletes. This could mean that for some athletes, days off are beneficial, but for others, days off are detrimental. Future research should investigate how days away from sport are related to athlete burnout to determine whether they are preventative or indicative of burnout for athletes at the Division I level.

### *Practical Applications for Athletes*

Stigma is a major barrier that keeps athletes from speaking out about their mental health struggles (Purcell et al., 2019; Cutler et al., 2020). If athletes are given a platform to speak comfortably about their mental health struggles or were educated on the commonalities of mental health struggles within sport, they may feel more inclined to engage in preventative work in order to reduce anxiety, perfectionistic tendencies and burnout. Collegiate athletes further educating themselves on the pre-disposed factors that they face regarding mental well-being may create further opportunity for athletes to receive adequate evidence-based care for their symptoms. Athletes confiding in their teammates about their mental health struggles may also reduce the stigma associated with the fear of being rejected or alone in their struggle.

Additional barriers that inhibit collegiate athletes from seeking mental health support includes the belief that there are not readily available resources for them, fear of losing their scholarship due to coaches viewing them as mentally unstable and rejection from teammates (Cutler et al., 2020). Cutler et al. (2020) also found that collegiate athletes are more likely to

reach out for support from non-sport related support systems and are more likely to seek mental health services if they know the process is confidential. Collegiate team support staff may present counselors and clinicians affiliated with a team as the only mental health support available leaving athletes feeling trapped and worried about consequences related to their coaches finding out about their mental health struggles. Additionally, the majority of collegiate athletes believe they will be rejected or deemed as a failure by their teammates if they engage in mental health services. However, findings indicate that when a collegiate athlete finds out their teammate is engaging in mental health services, the athlete views the teammate as trustworthy and does not deem them as a failure (Cutler et al., 2020).

### *Practical Applications for Coaches and Athlete Support Personnel*

There are several important take away points from this study for coaches and athlete support personnel (e.g., sport psychology professionals, athletic trainers). First, coaches and athlete support personnel should exercise caution when creating and endorsing rigid pre-performance routines because these routines can be harmful for high anxiety athletes. Some athletes may feel like there is no way for them to perform well without their rigid routine, potentially making them feel more emotionally exhausted after competing in an environment that they are unable to control. Hence, for athletes with high anxiety, prescribed sport rituals have the danger of becoming detrimental to overall mental health and longevity within their sport.

This study adds to the literature exposing the danger of high rigidity and perfectionistic tendencies in athletes, and we urge coaches and athlete support personnel to increase awareness on the subtle differences between healthy and unhealthy athlete behaviors. Being overly responsible and perfectionistic is considered socially appropriate for competitive and driven athletes (Reardon & Factor, 2010); however, these characteristics are often present for individuals with anxiety and therefore, may be overlooked in athletes (O'Leary et al., 2009; Martinelli et al., 2014). Without appropriate treatment, symptoms of anxiety related disorders may worsen, force individuals into isolation (Najmi et al., 2009) and lead to exhaustion (Guzick et al., 2017). Considering the subtle differences and potential confusion between what is normal vs. abnormal in terms of anxiety and sport, it is important to educate coaches and athlete support personnel on these differences.

Second, coaches and support personnel should consider the hesitation athletes have in confiding in collegiate team support staff about mental health such as fear of lack of access to appropriate mental health resources, consequences of loss of scholarship due to mental health struggles and fear of rejection. According to the NCAA Mental Health Best Practices (2016), one of the key components includes creating a destigmatized and positive health promotion environment. Educating athletes on the commonalities of mental health struggles may create an environment where collegiate athletes feel safer to seek mental health support. Collegiate athletes may benefit from athletic staff educating them on the implementation of a mental health confidentiality protocol plan in order to give them confidence to request and seek appropriate care from a point person that is not heavily involved in the collegiate sports teams. For example, coaches and support personnel may suggest that athletes are able to request resources from the campus wellness counselor instead of the athletic advisor should they feel more comfortable.

Third, coaches and athlete support personnel would benefit from education on how to recognize when athletes are struggling with anxiety related disorders and when to guide these athletes to evidence-based appropriate care. According to the NCAA Mental Health Best

Practices (2016), it is encouraged for collegiate sports programs to pre-screen athletes for mental illness. If given a diagnosis or early onset of symptomology is noticed, athlete support personnel may work with athletes on finding a preventative treatment plan (i.e. specialized therapist, support group, psychiatrist). Athletes with high anxiety could benefit from effective forms of treatment for anxiety disorders, such as cognitive behavior therapy (CBT; Olatunji et al., 2010). CBT focuses on the creation and adaption of skills, changes in behaviors as well as changes in cognition (Kaczurkin & Foa, 2015). With athletes that perceive their sport rituals as negative, it may be effective to engage in CBT treatment to boost self-confidence and sport self-efficacy, as research suggests that athletes with higher levels of self-confidence and sport self-efficacy are more successful at reducing negative anxiety associated with their sport (Besharat & Pourbohloul, 2011). Additional characteristics that are associated with positive experiences in sport and psychological well-being include the ability to endure and recover from difficult situations (Nezhad & Besharat, 2010).

Lastly, we encourage Division I institutions to raise awareness of the commonalities of anxiety related disorders by universally providing athletes with educational resources and continually encouraging them to seek help when it is needed (NCAA, 2016; Sudano et al., 2017; Cutler et al., 2020). The previously mentioned perceptions of what it takes for an athlete to be successful (i.e. perfectionism, over-rigidity) may be a major treatment barriers to struggling athletes seeking appropriate resources for mental health due to the fact that these athletes feel these behaviors are needed in order to maintain achievement within their sport. For example, research findings suggest that those with perfectionism often struggle with treatment due to believing that the behaviors they are engaging in are appropriate, meaning that the perfectionism is ego syntonic (Flett & Hewitt, 2008). Implementation of screenings to determine anxiety related disorders could be a preventative measure for athletes to improve their mental health before they are debilitated by their anxiety. More preventative measures may decrease the fear driven pull of engagement in ritualistic behaviors; furthermore, evidence-based treatment (CBT) for collegiate athletes experiencing higher levels of anxiety will enhance their mental well-being and may prevent burnout.

### *Limitations and Future Research*

There are a few limitations worth noting in this study. Due to the cross-sectional, survey method used in this study, it is impossible to determine causality. Typically, mediational models are viewed as causal models. Therefore, the model in this paper must be interpreted with caution due to the cross-sectional method of data collection. Additionally, the self-report nature of the study may lead to socially desirable responding and bias in responses. For example, cultural bias on how athletes are supposed to act and feel in preparation for their sport may prevent athletes from recognizing their rituals, feelings, and behaviors as problematic, therefore, leading them to answer the self-reported survey questions conservatively.

It is important to note the position of sport ritualistic behavior and anxiety in this model. Research often conceptualizes sport rituals as a response to competition/sport anxiety. However, as explained in our model, we conceptualize sport rituals as something that all athletes engage in at some level, regardless of their anxiety. For example, whether it is a series of deep breaths, a pair of lucky socks, or a pre-competition mantra, the majority of athletes engage in some sort of consistent routine(s) prior to performance. In turn, it is the general level of anxiety that the athlete experiences, whether related to or unrelated to sport, that can cause a damaging

relationship between the sport rituals and burnout. We encourage future researchers to assess the relationship between sport rituals and anxiety severity in greater depth.

Additionally, further evaluation on the mental health components that differ amongst individualized sports and team sports may be a future preventative tool to monitor athletes that are predisposed to symptoms of anxiety, perfectionism and burnout. However, our data collection was limited with far more individualized sport participants than team sport participants. Additionally, far more female athletes responded to the survey than male athletes making it unreliable to evaluate the differences in anxiety, perfectionism and burnout amongst gender. Increasing the sample size, diversity of sports represented in the sample, and including observation and qualitative information to understand what athletes are doing as part of their ritual and how they think it impacts them would shed more light on the nature of sport rituals and anxiety among collegiate athletes.

Additional research is needed to understand the severity of anxiety disorders in Division I collegiate athletes. Traditional scoring of the DASS-21 anxiety subscale suggests that scores of 15-19 are considered severe (Lovibond & Lovibond, 1995). We set the cutoff for high anxiety of our sample at one standard deviation above the sample mean (16.83); therefore, in this study, collegiate with scores of 15 or 16 are not considered severe in comparison to other collegiate athletes represented in this sample. More research is needed to determine if higher anxiety is a unique characteristic of this sample or the norm for the population of NCAA Division I level collegiate athletes. Finally, research is warranted to determine the differences between collegiate athletes and elite athletes in relation to anxiety, burnout and ritualistic behaviors.

## Conclusion

Sport ritualistic behaviors and burnout are mediated by high levels of anxiety. This means that athletes engaging in sport related rituals are more likely to experience burnout if they have high levels of anxiety. There is limited research evaluating *how* anxiety disorders impact collegiate athletes. Additionally, anxiety disorders may be harder to identify in collegiate athletes because of the overlap between sport performance anxiety in competitive situations and consistent general anxiety. In many cases, anxiety is normalized in sport since it is a common response to competition, pressure, and the expectations that are placed on athletes. The ability to distinguish between performance enhancing pre-competition anxiety and debilitating general anxiety is a key factor in keeping athletes healthy and engaged in their sport.

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