Performance Anxiety in Sport: The Interrelated Factors Contributing to an Athlete's Capability to Perform and Best Practices for Effective Management

By

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Abstract

This capstone project will aim to outline influential and important aspects of performance anxiety in sport. Athletes and performance anxiety in sport are synonymous; there is not one without the other. However, athletes can experience performance anxiety in incredibly diverse ways, which is dependent on a number of factors outlined throughout this paper. Along with an investigation of the conceptualization of performance anxiety, some of the most effective interventions for managing the effects of performance anxiety will be featured. My hope is that this paper will not only inform practitioners who work with athletes and performance anxiety, but also serve as a useful tool for anyone who is involved in sport, including athletes themselves.

Keywords: performance anxiety, competitive anxiety, (elite) athlete, performance, pressure, sport, debilitative anxiety, facilitative anxiety, self-confidence

Dedication

First and foremost, I would like to dedicate this capstone project to my parents, Sonia and Kevin. You instilled important values in me, such as work ethic, sacrifice, resilience, and dedication, and I would not be where I am without you both. You are an inspiration for everything I do, and I am eternally grateful to have you as parents and role models.

To my siblings, Marino, Nico, and Tatiana. Despite being the oldest of the four of us, I'm consistently amazed by each of you, and I look up to all of you in unique and profound ways. In growing up together, you have all helped shaped me into the person I am. It is an extraordinary blessing to have you as my siblings.

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Table of Contents

Chapter 1: Introduction

Regardless of age or gender, an individual's decision to participate in sports usually comes to fruition due to a variety reasons. In any case, the underlying reason people play sports is because they are fun. Engaging in sports also provides opportunity for socialization and for learning many important life skills, such as dedication, work ethic, commitment, perseverance, and teamwork (Wilson et al. 2022). However, as athletes progress in their respective sports (i.e., move up in levels), competition may rise along with expectations, judgment, evaluation, stress, anxiety, and pressure (Sankaran, 2018; Souter et al., 2018). Eventually, having fun or getting exercise can become mere by-products of sport, whereas climbing the rankings, setting records, becoming the next 'great one', winning at any cost, or reaching and exceeding one's highest potential become the primary focus or purpose of being an athlete (Krumer et al., 2011).

Achieving optimal performances in sport can be associated with elevated levels of psychological stress (i.e., anxiety), which, in turn, can have a negative impact on performance (Williams et al., 2021). Whether athletes have trained their entire lives for a chance at the Olympic games, whether their performance determines their eligibility for a scholarship providing an opportunity for higher levels of education, or whether their livelihood depends on their performance because they have amalgamated their sport into a profession, playing sports at an elite level means that the stakes are insurmountably elevated. In other words, stress is ubiquitous in elite sports because success relies on performance (Gucciardi et al., 2017). How athletes perceive and cope with their psychological stress is an important consideration (Williams et al., 2021). Considering this trajectory, how do athletes handle this distress? How does anxiety affect them? What are the specific drawbacks (i.e., emotional or mental distress) of participating in sport, particularly at an elite level?

Area of Inquiry

In the world of sports, elite athletes are often adulated to heroic levels and held in the highest regard (Reid, 2017). They are idolized and worshipped, especially by their younger counterparts, due to their ability to perform at supernatural levels and showcase skills that only a select few in the world can successfully perform (Reid, 2017). This level of admiration seems only natural, as establishing heroes that we can look up to and emulate, as well as our desire to be respected and viewed as the best in specific categories and domains are both human tendencies (Anderson & Hildreth, 2016), especially for athletes. Given the aggrandizement that elite athletes often involuntarily undertake, they are considered to be highly privileged individuals in contemporary society (Reid, 2017); therefore, their difficulties are often overlooked or go unnoticed (Souter et al., 2018). From this perspective, it begs the question of how an athlete can be revered by others for having exceptional skill in their respective sport and also experience similar struggles to a layperson, such as experiencing acute anxiety or pressure?

What people may fail to consider is that even the greatest athletes in the world experience distress in similar ways that others do, which highlights a phenomenon known as the halo effect. The halo effect is a cognitive bias where people tend to form opinions and judgments about others based on predispositions towards specific attributes, which can be challenging to revise (Nicolau et al., 2020). However, on top of customary life stressors that athletes face as human beings (i.e., financial struggles, relationship difficulties, grief, loss, etc.), there are a myriad of sport specific stressors (i.e., pressure to produce quality performances, staying healthy, not letting teammates or coaches down, etc.) that come along with being an athlete that can be detrimental to both their performance and their livelihood. Ford et al. (2017) shared a quote from Sidney Crosby, a future hall of famer in the National Hockey League who holds three Stanley

Cup championships, as well as world championships and two Olympic gold medals who stated "I don't think you're human if you don't get nervous." Indeed, one of the greatest hockey players' of all time is not immune to experiencing nerves, and is susceptible to stress and performance anxiety. This explains why elite athletes like Crosby have developed ritualistic routines an coping mechanisms in order to confront these difficulties.

There are prominent differences between athletes and how they approach their specific roles in their sport. Some athletes enjoy the pressure and excitement of large-scale events and are able to exhibit outstanding, or even clutch performances when it counts most, while others succumb to anxiety and tend to underperform (Geukes et al., 2017). Given that sports attract a significant amount of attention, especially at elite levels through the media, the pressure to perform can be a source of anxiety for athletes (Rowland et al., 2021). In order for an athlete to achieve their highest performance potential, they must manage both internal (i.e., personal expectations) and external (i.e., societal) pressures, as well as their anxiety symptoms (Chaube, 2013). A few specific examples regarding areas of increased distress related to pressure and performance anxiety include athletes experiencing performance anxiety prior to competition, athletes who are unable to bounce back from poor performances, or spectator's expectations of athlete performances. These examples validate and warrant the necessity of approaching sports performances from a scientific approach (Sankaran, 2018).

Over the last few decades, sports psychology has become exponentially prominent (Correia & Rosado, 2019; Ford et al., 2017; Souter et al., 2018). Sports psychology researchers have unanimously agreed that competitive sports have a strong likelihood for high levels of stress and anxiety (Ford et al., 2017). The emergence of research on this topic is more prevalent than ever, especially with regard to performance anxiety's influence on athlete performance

(Chaube, 2013; Ford et al., 2017; Lochbaum, 2022; Souter et al., 2018). In fact, there is a large body of literature providing explanations, conceptualizations, and causes for performance anxiety (Frame & Reichin, 2019; Ford et al., 2017; Gucciardi et al., 2017; Hagan et al., 2017). Understanding the various factors underlying athlete performance anxiety is important, particularly for counsellors and other practitioners working with athletes because it provides vital insight to the processes and mechanisms of performance anxiety, as well as a means of understanding how to work with it. Performance anxiety and its constituents, as well as some of the most effective ways of coping with it will be the focus of this paper.

Purpose Statement

The primary goal of the research outlined in this paper is to understand performance anxiety in competitive athletes. A significant amount of the research in the field of sports psychology can be attributed to understanding the connection between anxiety and performance; however, they are both synonymous with sport (Chaube, 2013). The professional literature concerning performance anxiety highlights the importance of the psychological influence of anxiety, pressure, and stress on performance in sports. In their findings, Ford et al. (2017) summarized a few of the many examples of how performance anxiety can impact athletes, especially if left unattended to, including negatively impacting performance in sport during both practice and competition, an increased risk for sustaining an injury, obstructing injury rehabilitation and the return to play process, and increasing the risk of reinjuring, to name a few. The literature demonstrated there can be both physical and mental repercussions on athletes who experience performance anxiety (Cheng et al., 2009; Geukes et al., 2017; Kemarat et al., 2022; Zhang et al., 2018). The effect of anxiety on performance extends beyond what is initially presumed, and the quality of performance in elite athletes is typically a product of how an

individual may respond – physiologically, behaviourally, or cognitively – to a sporting event that is perceived as stressful (Ford et al., 2017). Therefore, the purpose of this paper is to examine the *what, why,* and *how* regarding the topic of performance anxiety. *What* is it? *Why* do elite athletes experience it? *How* is it most effectively addressed and managed?

Furthermore, when the word anxiety is mentioned, one might automatically jump to maladaptive conceptions about its effects, but in doing so you may be engaging in an oversimplification of a complex phenomenon (Cheng et al., 2009). Therefore, an important question to consider is whether or not anxiety is always conceived as being detrimental to or having a negative impact on performance.

The questions addressed in this paper include: What is performance anxiety in sport and how is it experienced amongst athletes? Who experiences performance anxiety and why? Who is most prone? How is performance anxiety talked about within sport? What determines how an elite athlete will conceptualize (i.e., positively or negatively) performance anxiety and how does this understanding contribute to effect coping amongst athletes? What are the differences between debilitative and facilitative performance anxiety and how does each affect the quality of performance? What causes performance anxiety? What are the most effective interventions for coping with performance anxiety and perceived pressure?

The research and literature that will be shared throughout this paper has a multifunctional purpose, as it will review the existing literature in terms of populations and genders, as well as discrepancies between research studies conducted on the effects of performance anxiety. The hope is that this paper will assist counsellors, mental performance consultants, and other health professionals in their work with athletes from all sports, ages, and levels. Furthermore, this research could aid athletes seeking assistance for managing performance anxiety in their

respective sport. Additionally, coaches, trainers, teammates, and other staff members of individual or team sports could benefit from the subjects and points that will be discussed, as the themes are relevant to most, if not all athletes in all domains of competitive sport. This subject matter will hopefully provide insight to the intricacies of the challenges that elite athletes endure, and ways in which their livelihood and performances can be enhanced.

Contribution to the Field

The mental side of sport has only become a notable point of discussion over the past few decades; nevertheless, it has always been a part of sport (Bauman, 2016). An athlete's sense of identity can be interconnected with their participation and performance outcomes in sport (Geukes et al., 2017). Performance anxiety was not a familiar term throughout my career in hockey. Regardless of my conscious awareness, my experience of anxiety had a significant impact on my performances, which consequently affected my life outside of hockey. Given that my role as an athlete was such a significant aspect of my identity, my mental health was largely influenced by how well I was performing at any given time. This experience demonstrates the importance of the psychological influence of anxiety on sport and performance. After reflecting on my time participating in sports, there is no doubt that I would have found it extremely helpful to have more knowledge about performance anxiety. Furthermore, normalizing conversations about performance anxiety provides athletes with validation that there is tangible explanation for things like choking in sports, which is defined as performing poorly or, more specifically, performing at a level that is inferior to expectations as a result of heightened anxiety due to perceived pressure (DeCaro et al., 2011; Frame & Reichin, 2019; Masaki et al., 2017). Not only could this knowledge have provided some validation for my struggles, but it also could have yielded insight as to the best possible way of confronting and managing the anxiety, pressure,

and stress connected to sport.

In my future practice, I hope to amalgamate my work as a clinical counsellor with mental performance consulting for the athlete population. Ford et al. (2017) highlighted some of the foundational features associated with being a therapist who works with athletes and the importance of both client-specific and practitioner competent care in the recognition and treatment of performance anxiety. Working collaboratively with an inter-professional team, as well as ongoing learning, training, and professional development are also important (Ford et al., 2017). Given my experience as a former elite athlete, I am enthusiastic about the shift that applied sport psychology has been making from an intervention approach to one of prevention (Sánchez-Romero et al., 2021). This happens only through understanding the mechanisms and processes of performance anxiety, as well as what research elicits as support for effective management. My first hand experience bestows on me the insider understanding and comprehension of the toll that anxiety, pressure and stress can take on athletes, and some of the ways to best prevent or counter performance deterioration. However, I recognize the importance of being cognizant that no individual experience is the same and anxiety can manifest itself differently for everyone, as well as being "mindful of how anxiety can influence athletes' cognitive appraisals, physiological arousals, and ultimately, performance in a range of performance related situations" (Ford et al., 2017, p. 210).

Ultimately, this research will both inform and influence my future work with athletes. It is my hope that this capstone can provide at least one explanation for the existence of performance anxiety, as well as some tools to address it.

Self-Positioning Statement

In terms of my positioning with the content presented in this paper, I have a personal

connection to performance anxiety in sport. I have played ice hockey for the past twenty-five years, fifteen of which were at a competitive level, and seven of those fifteen being at an elite level (collegiate and professional). It is important for me to acknowledge that I am an insider to this topic due to my position as an athlete, accompanied by the shared knowledge and lived experiences that I may have with other athletes. Being in this position gives me a personal connection to the material and allows me the opportunity to share research, experience, and knowledge that could have been relevant to my own success in sport and, therefore, the possibility of assisting other athletes. My lived experience provides me with unique insight, as well as the capacity to understand the applicable influences and impacts of performance anxiety on athletes. Ice hockey is recognized for its dynamic and fast paced nature, which requires a versatile combination of athleticism, as well as effective management of an abundance of factors, including the mental component (Vidic, 2021). Effective coping including stress management and resilience are considered important skills needed if a hockey player has any hope of elite athletic performance, as well as overall well being and functioning in life outside of hockey (Vidic, 2021).

Throughout my hockey career, performance anxiety was not a term that was used in a colloquial way as part of being an athlete, especially at the elite level; rather, it was something that was accepted and considered the price I had to pay for being an athlete. In other words, it was just something I had to deal with. Nonetheless, I never felt that I had the tools or resources to be able to cope with or manage anxiety effectively.

Performance anxiety played a large role in affecting my performance on the ice, which indirectly influenced my mental health and well being off the ice. For most of my life, being a hockey player was a salient aspect of my identity so when I wasn’t performing up to my own, or

others' standards, it took a toll on my mental health. I put an immense amount of pressure on myself to perform but I also felt external pressures as well, whether it was from coaches, teammates, scouts, family, friends, or even spectators. I didn't handle the pressure very well because it was something that I had never adequately prepared for, especially when I was playing at higher levels of competition.

For most of my career, I struggled with confidence, physiological symptoms of somatic anxiety, and cognitive anxiety, including manifestations such as negative thoughts. For the majority of the time, I conceived my performance anxiety as being debilitative. I remember being in practice and having the utmost faith in my abilities to compete and perform at high levels. However, when it came time to put my skills to the test in games there seemed to be a lack of congruence, and it was not for lack of effort. I would often ask myself "Why can't I just perform up to my potential? I know I am capable I just can't get out of my own way." Along with the negative feedback I received from external sources, these internalized messages became a pattern that dominated my thought processes leading up to and throughout most of my performances. If I had some of the interventions and techniques that will be outlined in this paper, my hockey career may have been prolonged or even elevated to higher levels within the sport. My hope is that the information provided in this capstone will be of use to not only professionals that work alongside athletes, but also for athletes themselves.

Definition of Terms

Throughout this paper, a number of key terms and variables will be discussed. This section will be devoted to providing definitions and explanations of those terms within the context of sport. First, general anxiety is a common mental and emotional state that all human beings experience, including athletes at every level of competition. Ford et al. (2017) described

performance anxiety as being a reaction or response to perceived stress associated with the pressure of performing well on a specific task. It is characterized by an unpleasant psychological state consisting of mental distress (i.e., worry or fear), as well as physiological effects (i.e., sweating, increased heart rate, muscle tension), which can have significant impacts on functioning (American Psychiatric Association, 2013). In sports, these components are usually exacerbated in situations where an athlete is being observed and evaluated based on their performance (i.e., it is a common response for athletes). In essence, this is performance anxiety in sport. Rowland et al. (2021) asserted that anxiety is associated to various types of performance because when you consider the nature of performance there is often a judgment or evaluative component associated with it, which can have significant benefits or drawbacks depending on the quality of the performance. Regardless, evaluation can further exacerbate anxiety on behalf of the performer. For the purpose of this paper, anxiety will be referred to in the specific context of its relation to performance and competition in sport.

Second, performance in sport can be defined as carrying out desired actions or skills in relation to the practice or competition of ones' respective sport (Ford et al., 2017), including an athlete's ability to adapt to environmental and contextual influences (Kellmann et al., 2018). It is usually directed towards consistently and reliably accomplishing a specific task, goal attainment, or competing to ones' highest capability, skill, and potential. Athletic performance is often measured by perceptive ratings of the quality of performance under specific conditions, including whether or not goals were achieved, and the feelings and level of satisfaction associated with the performance based on a reference point and certain criteria (i.e., predefined standards) from which to draw evaluations and conclusions (Frame & Reichin, 2019; Kellmann et al., 2018). Furthermore, performance is multidimensional given that it contains both

physiological factors, including speed, endurance, strength, agility, and flexibility, as well as psychological elements, such as motivation, concentration, confidence, and volition (Kellmann et al., 2018). Third, the performance pressure that is referred to in this capstone can be conceptualized by athletes' perceptions of growing importance and urgency to perform well at their role in their respective sport (Low et al., 2022). Pressure is comprised of the stress and demands as perceived by an athlete (Rowland et al., 2021). Fourth, elite levels of sport are considered to be Olympic, collegiate, or professional; therefore, when elite athletes are mentioned throughout this paper, it is implied that they participate in their respective sports at one or more of these levels. Lastly, team sports are conceptualized in the case of an athlete being a member of a team in competition, while individual sports consist of only one person competing on their own against other individuals.

Outline of Capstone Project

This chapter has introduced some of the key ideas and frameworks that encompass performance anxiety in sport and the effects that it can have on elite athletes. In the next chapter, I will examine performance anxiety in greater detail, as well as some of the reasons why it can be both harmful and beneficial to an athlete's performance. This will include a critical analysis and review of recent literature within the domain of sports psychology. The final chapter will consist of a discussion regarding applied practices and informed recommendations that will be useful for health professionals; coaches, trainers, and other staff members; family, friends, and teammates; and, most importantly, athletes who are struggling with the debilitating effects of performance anxiety. My personal experience and career in hockey ultimately provides me with a first-hand understanding of the impact that performance anxiety and stress can have on elite athletes. This will inform how I approach the research and literature. Given that everyone experiences

performance anxiety in some domain, the focus of this paper will be directed towards the unique aspects of the experience.

Chapter 2: Literature Review

In this chapter, I will explore performance anxiety in sport and some of the elements associated with this phenomenon. Much of the literature that is being drawn upon for this section will involve peer-reviewed journal articles and research studies analyzing the effects of performance anxiety on athletes, taken from the City University of Seattle library, as well as other online and printed sources. Additionally, further information from various sources, such as books and news articles, will be included in order to develop a clearer picture of performance anxiety in athletes. Given that the existing literature on performance anxiety is incredibly diverse coming from a wide variety of countries, cultures, and in differing languages, performance anxiety, competitive anxiety, and sport-related anxiety will all be used interchangeably. The sections included in this chapter will provide an in-depth examination of what performance anxiety is, as well as how it is experienced and conceptualized among professionals working in the field of performance anxiety and sport. Paradoxes within the existing literature will also be explained and analyzed; however, it is also important to consider their dialectical nature. While it may initially seem like some of the proposed components are contradictory, both can be true and exist simultaneously. Furthermore, this chapter will investigate factors that may contribute to performance anxiety in athletes, such as who is affected and what some of the proposed causes may be. The literature review will also consider various components of the empirical evidence on performance anxiety in sports, including gaps, limitations, critiques, and themes.

Performance Anxiety

Overview of Performance Anxiety

In the world of sport, especially at elite levels, athletes strive for optimal performance in their respective arenas. However, there are many variables that can influence it. Although participation in elite sports comes with many benefits, there are significant challenges that need to be considered, such as the competitive environments that are created and stressful demands that are placed on the athletes (Jones, 1995; Williams et al., 2021). This is not surprising as there has been a somewhat unanimous agreement among sport psychology researchers that there is a potential for elevated levels of stress and anxiety in competitive sports (Frame & Reichin, 2019; Ford et al., 2017; Geukes et al., 2017; Hagan et al., 2017; Kemarat et al., 2022; Kjormo & Halvari, 2002; Low et al., 2022; Muhammad et al., 2020; Rowland et al., 2021; Williams et al., 2021). How an athlete responds to these demands and stressors, which includes their behavioural, physiological, mental, and emotional responses, is crucial and has become a focal area of research in sport psychology (Hanton et al., 2004; Woodman & Hardy, 2001). How athletes respond to and perform in competitive events may impact the effectiveness of their ability to achieve their highest potential. However, reaching one's highest and desired potential in terms of performance is not always the outcome of competing in sports, and this paper will outline some of the factors that may have implications for the reasoning behind that underachievement. Performing at lower levels than an athlete is capable of is not necessarily a product of an absence of effort, motivation, or even skill. Rather, it can result from a concept that has become all too familiar in contemporary society, anxiety (Beilock et al., 2017).

In his book, *Unwinding Anxiety*, Doctor Judson Brewer provided a thorough definition and conceptualization of general anxiety and how it affects humans. He quoted anxiety as being

a response to an upcoming event, typically with an uncertain outcome, which involves feelings of nervousness, unease, and worries (Brewer, 2021). However, for the purpose of this paper, anxiety is being focussed on within a specific domain, the context of sports; thus, it is differentiated from generalized anxiety because it is conceived as a typical response and common emotional state that athletes experience regardless of the level of sport regarding their performance (Beilock et al., 2017; Ford et al., 2017). Sport-related anxiety can be defined in terms of "an unpleasant psychological state in reaction to perceived stress concerning the performance of a task under pressure" (Cheng et al., 2009, p. 271). Among the sport psychology literature, performance anxiety occurs when an athletes skills and performance are being evaluated (Beilock et al., 2017; Ford et al., 2017), typically in a way that could subject the athlete to possible unfavourable or disparaging judgement, scrutiny, or criticism from others (Chaube, 2013), which can result in apprehension and distress on behalf of the athlete (Geukes et al. 2017). For this reason, it is proposed that competitive anxiety is likely the most common issue that athletes experience (Chaube, 2013; Williams et al., 2021) and that it is most often negatively correlated with performance (Frame & Reichin, 2019; Geukes et al., 2017; Hagan et al., 2017; Kemarat et al., 2022; Kjormo & Halvari, 2002; Muhammad et al., 2020; Parnabas et al., 2015c; Williams et al., 2021). In essence, higher anxiety equals lower levels of performance.

A short sighted assessment of the quality of an athlete's performance can be based on the physical abilities and skill level that an athlete showcases during a competition. However, physical training and ability is only one factor involved in a successful performance (Muhammad et al., 2020). In opposition to the idea that performance is purely based on skill level, there is a plethora of research showing the effects of competitive anxiety on performance. The psychological dimension of competing in sport should not be overlooked as psychological

training and readiness can affect athlete success by providing an athlete a proactive approach for achieving pre-determined goals (Muhammad et al., 2020). Beilock et al. (2017) asserted that experimental evidence suggests that performance anxiety is a causal factor in poor performance. Psychological interventions are tools used to combat performance anxiety, and while they do not have causal effects for increasing physical abilities, they do allow athletes who experience performance anxiety to perform better (Beilock et al., 2017). This finding suggests that the psychological component of participating in sport is a mediating factor of performance, regardless of ability or skill level (Beilock et al., 2017). For example, in their meta-analysis of imagery interventions in sports, Simonsmeier et al. (2021) found that psychological interventions involving imagery with athletes significantly enhanced their motor performances. Psychological interventions, including imagery, will be explained in further detail in the final chapter of this paper.

Performance anxiety can be something that athletes experience both leading up to competition (i.e., pre-competition anxiety) and during competition, which can produce a negative impact on performance through mistakes and errors in judgment (Chaube, 2013; Williams et al., 2021). Mere anticipation of performing, especially on larger scales at elite levels, and attempting to manage the uncertainty of the outcome are reactions that athletes experience, and can triggers symptoms of anxiety, which can undermine performance (Beilock et al., 2017; Chaube, 2013; Frame & Reichin, 2019). Some of these symptoms include negative cognitions or worries, as well as physiological arousal, which may lead to avoidance behaviours, decreased access to personal resources, negative attitudes, and performance deficits (Beilock et al., 2017; Ford et al., 2017). These effects of performance anxiety can result in a negative feedback loop, where competitive anxiety diminishes performance, and unsatisfactory performances induce anxiety in

subsequent competitions (Beilock et al., 2017). The following sections will explore the components of performance anxiety, which will include ascertaining the difference between competitive trait and state anxiety, as well as somatic and cognitive effects on performance.

Competitive Trait Anxiety Versus Competitive State Anxiety

What aspects of personality and background have an effect on performance? How much is context, environment, type of sport, and level of sport a determining factor in performance? Anxiety can be differentiated into two separate categories: trait anxiety and state anxiety. Trait anxiety refers to aspects of personality, tending to be more stable in nature, associated with the perception of specific circumstances and situations as being demanding, threatening, or anxiety provoking (Chaube, 2013; Ford et al., 2017; Frame & Reichin, 2019; Geukes et al., 2017; Muhammad et al., 2020). Trait anxiety is a personal perception for how strongly or intensely an athlete may feel anxiety in anticipating a competition (Chaube, 2013; Frame & Reichin, 2019). For example, some athletes may only feel slightly nervous leading up to a competition, whereas others may be overcome with anticipatory anxiety, resulting in nausea, vomiting, or fainting (Frame & Reichin, 2019). A prime example of this is the Buffalo Bills star quarterback in the NFL, Josh Allen, reports in an interview that he vomits before every game (Polacek, 2022).

Researchers in the field of sport psychology have found that athlete's personality characteristics are a good predictor of the quality of performance (Geukes et al., 2017). Wolf et al. (2015) found that athletes with a higher degree of trait anxiety had a higher propensity for anxious feelings in more situations as compared to athletes with lower levels of trait anxiety. Another study by Horikawa and Yagi (2012) showed that soccer players with higher trait anxiety scores were more susceptible to experiencing elevated levels of state anxiety under pressure, therefore decreasing performance in the number of goals scored, contrasted to those with lower

trait anxiety. Athletes with lower degrees of trait anxiety are less likely to experience competitive state anxiety before and during competition, which is inversely correlated with quality of performance. The relationship between trait anxiety and performance has direct implications for practitioners working with athletes who exhibit higher trait anxiety. Knowing that a client is more prone to trait anxiety will provide insight to their experience of more intense and frequent experiences of performance anxiety within their respective sport. Geukes et al. (2017) shared two principles of trait activation where "one could (a) explain when a personality trait predicts performance in situations (when the trait is relevant for the situation, i.e., is activated) and (b) get initial insights into why and how these associations emerge" (Geukes et al., 2017, p. 102).

However, this research highlights some limitations and problems that have characterized the literature pertaining to performance anxiety. The issues with the literature include the limitations and biases associated with self-report measures of anxiety, as well as the fact that measurements of performance and anxiety have been non-synchronous (Horikawa & Yagi, 2012; Jones, 1995). Jones (1995) noted that cognitive and physiological symptoms of anxiety could elicit a variety of states in different athletes. Further work could develop self-report measures that can accurately assess cognitions, behaviours, and emotions, as well as examine anxiety during performances and in real competitions. Another point of dispute among the performance anxiety literature is what gender tends to experience higher levels of anxiety, female or male. A claim made by some of the research is that females tend to report higher levels of performance anxiety compared with their male counterparts (Correia and Rosado, 2019; Kemarat et al., 2022; Martens et al, 1990; Muhammad et al., 2020). However, Hagan et al. (2017) reported that males experience a greater intensity of performance anxiety symptoms than females. Correia and Rosado (2019) discussed that more research has been conducted on male athletes, with larger age

ranges, which could also account for some of the conclusions. Therefore, more age specific research should to be conducted, as well as increased studies on female and non-gender conforming athletes.

One study that has been conducted to extend the existing literature on anxiety in the field as opposed to experimental designs and laboratory settings involved Geukes et al. (2017) testing whether personality traits were capable of predicting real-world sport performance under natural pressure during gameplay. They used personality traits (i.e., negative evaluation, dispositional reinvestment, and athletic identity) as predictors in low and high-pressure free throw performances in basketball games. Geukes et al. (2017) found two major findings: the first was that none of the personality traits were predictors of performance under low pressure, and second when the players were under high pressure, the fear of negative evaluation was the only trait indicative of a reduction in the quality of performance. Furthermore, state anxiety also shared a negative correlation with performance under high pressure during competitions (Geukes et al., 2017). In support of the distraction model, which posits that the ability to avoid distraction, either from external or internal stimuli, is robustly related to performance results (Wolframm & Micklewright, 2010), Geukes et al. (2017) mentioned that athletes who are higher in fear of negative evaluation showed higher levels of performance anxiety leading to reduced quality of performance. This study expands the empirical support for the relevance of trait and state anxiety on performance, as well as how performance under pressure during competition is understood (Geukes et al., 2017). This study also overlooks the individual experience and symptoms of performance anxiety. Hence, a limitation of this study is that the perception of pressure and performance anxiety is different for every athlete, resulting in different experiences of the games

(Geukes et al., 2017). Just as we have seen how trait anxiety can impact performance, state anxiety can also be a salient factor for performance quality.

State anxiety is a temporary, dynamic, situation-specific anxiety in response to an upcoming event (Ford et al., 2017; Frame & Reichin, 2019; Geukes et al., 2017). It is further classified as somatic and cognitive anxiety (Muhammad et al., 2020), which are frequently exacerbated when there is an imminent exposure of an athlete to acute psychological stress from competition (Williams et al., 2021). A more extensive analysis of these categorical aspects of anxiety are considered in the next sections. Frame and Reichin (2019) provided a projection of state anxiety for athletes as elevating leading up to competition, with heightening of symptoms directly prior, which may also remain elevated during competition and diminishing at the end of the event. A few specific examples include a football kicker when they are preparing for a field goal that will determine the result of the game (i.e., win or loss), a baseball batter going up to the plate against a pitcher who is known for their ability to strike out their opponents (Frame & Reichin, 2019), a golfer who needs to make their final putt in order to force extra holes to determine a winner, or a hockey player who needs to score next in the shootout to prevent their team from losing the game. We have already seen from the Geukes et al. (2017) study and others proposed in this paper that state anxiety inevitably has an effect on all athletes. However, knowing that state anxiety is a more situational-specific response that athletes have, much of the literature regarding state anxiety pertains to the debate of the nature of the sport (i.e., individual versus team sports) and who is more likely to experience performance anxiety and to what degree does it effect them and their performance.

Individual sport athletes tend to experience higher levels of competitive anxiety compared to team sport athletes (Chaube, 2013; Correia & Rosado, 2019; Hossein et al., 2016;

Kemarat et al., 2022; Martens et al., 1990; Ramis et al., 2010). Given the self-reliance that individual athletes must have, they may be more prone to notice and experience the effects on their performance (Hossein et al., 2016). Individual athletes could be more susceptible to performance defects for to a number of reasons, including the fact that in team sports athletes have teammates who they can rely on, leaving them less exposed or vulnerable due to the weight and responsibility of the outcome spread out across the team, which can alleviate some of the pressure team athletes experience, contrary to those athletes who compete individually (Chaube, 2013; Hossein et al., 2016). Athlete's responses to competition are conceived as being dependent on requirements of sport and task characteristics (Hagan et al., 2017; Martens et al., 1990). Individual sports, compared to team sports, involve more personal exposure and pressure (Hagan et al., 2017; Woodman & Hardy, 2003). Hossein et al. (2016) asserted that athletes who participate in individual sports "may be more exposed to evaluation and more engaged in their own skills and abilities than team sport athletes given that responsibility for performance is not distributed across several performers" (p. 57). For example, in sports such as table tennis, an athlete is placed under strict emotional and cognitive demands where the task characteristics and situational demands are fast paced and reactive (i.e., short response window), and distraction can result in faults, which will likely affect the outcome of the game (Hagan et al., 2017).

Conversely, other studies on competitive anxiety have either revealed no differences between individual and team sport athletes (Hanton et al., 2008; O'Donoghue & Neil, 2015) or the opposite findings, where team sport athletes showed elevated levels of performance anxiety or worry compared to their individual sport counterparts (Correia & Rosado, 2019; Muhammad et al., 2020). Muhammad et al. (2020) proposed an explanation for this could be that individual sport athletes have a greater degree of control over their performance, behaviours, and responses

during the competition, which can directly dictate the outcome versus in team sports where ones performance is only one part of a whole (i.e., the collective team effort). The absence of outright consensus based on these findings could be influenced by sociocultural and contextual factors (Gucciardi et al., 2017; Hagan et al., 2017), with athletes from more individualistic cultures feeling greater pressures to make it on their own, whereas athletes from collectivistic cultures more pressure and precedence is placed on the group (Gucciardi et al., 2017). Ethnic identity can shape one's behaviours, thoughts, feelings, and perceptions. Therefore, presentations of emotion cannot be attributed as universal (Hagan et al., 2017). For example, there is a societal expectation of males from African societies to display bravery and resilience when facing unpleasant emotions, such as depression, distress, and anxiety, which could exacerbate experiences of panic, fear, or apprehension (Hagan et al., 2017). Males who openly convey and show their distressing emotional experiences are labelled "as lacking competitiveness, desire to succeed, and goal orientation motives and are often confronted with shame, guilt and subsequent rejection because of their perceived cowardice attitude and/or behaviors" (Hagan et al., 2017, p. 8). In the sport psychology literature, there appears to be a need for cross-cultural research studies. Future studies should consider and focus on the diversity of social behaviours and internal processes in association with athlete's cultural identities (Hagan et al., 2017).

As previously mentioned, the next two sections will focus on the co-occurring subcategories of competitive state anxiety, somatic anxiety, which is the physiological dimension, and cognitive anxiety, which is the psychological dimension (Cheng et al., 2009), and how those experiences impact athlete's performances. Somatic and cognitive anxiety are considered to be related and, simultaneously, separate constructs but are not bi-directionally dependent on one another (Beilock et al., 2017). Cultural psychology perspectives show in that

for different parts of the world, there is a powerful connection between the body and the mind in expression of distress, including anxiety (Dzokoto, 2010; as cited in Hagan et al., 2017). However, this varies within and across cultural contexts. Non-western cultures are often associated with more frequent reports of physiological symptoms in individuals who are psychologically distressed (Hagan et al., 2017). Even though somatic and cognitive anxiety are deemed to be elements of state anxiety (Muhammad et al., 2020) their role in performance anxiety is central, which highlights the fact that both are two major components of performance anxiety (Beilock et al., 2017). In light of the fact that symptoms of performance anxiety can be classified as somatic or cognitive, this makes it a multidimensional construct (Frame & Reichin, 2019; Williams et al., 2021). A large proportion of variation in quality of performance by athletes during stressful events can be attributed to somatic and cognitive anxiety (Williams et al., 2021). Williams et al. (2021) asserted that even though "it is overly simplistic to assume that anxiety is always detrimental to performance, a number of studies have demonstrated that higher levels of anxiety tend to be associated with poorer performance" (p. 2). For example, Geukes et al. (2017) reported that somatic and cognitive state anxieties are both negatively correlated with high-pressure performance. Further, Kemarat et al., (2022) noted that there are consistent dramatic changes in performance anxiety during competition, specifically with somatic and cognitive anxiety components because they are governed by both time and environment. Additionally, Chamberlain and Hale (2007) found that somatic anxiety intensity had a U-shaped correlation with performance while cognitive anxiety showed a negative linear relationship with performance.

Somatic Anxiety

Participating in athletic events requires intricate, skilled, and coordinated movements, which can become increasingly challenging when an athlete's body is in a tense state (Chaube, 2013). Particular levels of physical arousal can be helpful in preparing an athlete for competitions but when the physical symptoms of anxiety become turbulent, they may consequentially interfere with their ability to perform and compete (Chaube, 2013). The somatic element of performance anxiety is manifested by increases in physical arousal and activated bodily systems (Beilock et al., 2017; Chaube, 2013; Ford et al., 2017; Frame & Reichin, 2019; Kemarat et al., 2022; Martens et al., 1990; Muhammad et al., 2020; Williams et al., 2021). In response to athletic events or competitions, somatic anxiety is characterized by the following somatic tension and physiological hyper arousal symptoms, including elevated blood pressure (Beilock et al., 2017), increased heart rate (Beilock et al., 2017; Chaube, 2013; Ford et al., 2017; Frame & Reichin, 2019; Kemarat et al., 2022; Muhammad et al., 2020; Williams et al., 2021), perspiration (Chaube, 2013; Ford et al., 2017; Frame & Reichin, 2019; Kemarat et al., 2022; Williams et al., 2021), intensifying respiration and/or shortness of breath (Chaube, 2013; Kemarat et al., 2022; Muhammad et al, 2020; Williams et al., 2021), upset stomach (Chaube, 2013; Frame & Reichin, 2019), muscle tension and shaking (Chaube, 2013; Kemarat et al., 2022; Muhammad et al., 2020), inability to concentrate, trembling, insomnia, dizziness, loss of appetite, nausea, and vomiting (Chaube, 2013). Somatic anxiety is also indicated by a broad range of various behavioural signs, including but not limited to, pacing, and fidgeting and biting fingernails (Chaube, 2013; Ford et al., 2017).

Somatic anxiety can be both beneficial and a threat, undermining sports performances in athletes (Beilock et al., 2017). Muhammad et al. (2020) reported elite runners registered lower

levels of somatic anxiety as compared to non-elite runners and that there is a negative correlation between somatic anxiety and runners' times in a race. Moreover, Beilock et al. (2017) hypothesized that although somatic anxiety may have a negative impact of performance for athletes in high-pressure contexts, it may be that athletes who are prone to higher levels of performance anxiety respond to low-pressure contexts in similar ways. Beilock et al. (2017) provided an example of how skiers conceptualize their physiological responses to anxiety while looking down steep, ice slopes, and highlight the contrasts of interpretations of arousals between skiers. These interpretations of symptoms can be conceptualized either positively or negatively, where experienced, elite skiers might think of their pounding heart as a sign of excitement, and their inflated confidence in their skills and abilities leads to positive thoughts (Beilock et al., 2017). Conversely, their novice counterparts may interpret the same steep, icy slope as being too difficult, which induces panic. In both cases, the skier's symptomatology is similar, but it is in how the athlete conceives it that lays the difference (Beilock et al., 2017). A more comprehensive exploration of differences between elite and non-elite athletes will be analyzed in a later section. Similar to the somatic component of anxiety, the cognitive element can also have a significant influence on athletes.

Cognitive Anxiety

Specific amounts of worry about performance quality can be accommodating in competition but extreme symptoms of cognitive anxiety (i.e., negative thoughts and expectations of failure) can lead to self-fulfilling prophecies (Chaube, 2013). Cognitive anxiety, another salient component of performance anxiety, is primarily associated with the mental processes and responses surrounding performance both during and in anticipation of a sporting event (Beilock et al., 2017; Ford et al., 2017; Frame & Reichin, 2019; Kemarat et al., 2022; Martens et al., 1990;

Muhammad et al., 2020; Williams et al., 2021). Substantial discrepancies between performance during practice versus during competition or games can take a significant toll on athlete's mental strength and exacerbate cognitive anxiety (Chaube, 2013). Cognitive anxiety can be characterized by negative, unpleasant, or unwanted thoughts (Beilock et al., 2017; Ford et al., 2017; Frame & Reichin, 2019; Kemarat et al., 2022; Williams et al., 2021); concerns, fears, and worries about performance and losing (Beilock et al., 2017; Frame & Reichin, 2019; Hagan et al., 2017; Kemarat et al., 2022; Martens et al., 1990; Williams et al., 2021); emotional distress (Kemarat et al., 2022; Muhammad et al., 2020); inattention (Ford et al., 2017); rumination (Frame & Reichin, 2019); distraction and hyper vigilance for problems (Beilock et al., 2017); and pessimistic expectations about the event and outcome (Kemarat et al., 2022). Cognitive anxiety can result in numerous adverse effects on performance, including an inability to focus on the tasks at hand, decision making difficulties, maladaptive thoughts or concerns about one's athletic abilities, or a loss of confidence in skill (Frame & Reichin, 2019; Martiny et al., 2015). Frame and Reichin (2019) argued that cognitive anxiety is the most prominent dimension in terms of having the most significant influence on performance. At the core of all of these consequences lies worry.

Worry is a distinct and very significant component in both anxiety (Brewer, 2021) and performance anxiety (Beilock et al., 2017). It can obstruct and negatively impact performance through hyper vigilance towards threats of athletes sporting environments, leading to an increased focus on errors (Beilock et al., 2017). This exacerbated attention to negative experiences, as well as noticing and monitoring for errors, can lead to further worries and negative thought patterns, which reinforces a continuous, cyclical negative feedback loop (Beilock et al., 2017; Masaki et al., 2017). Frame and Reichin (2019) highlighted the

significance of this repetitive feedback loop by placing a distinct label on it known as rumination. Rumination is where an athlete is persistently thinking about their failures, including both the causes and consequences as a result of that failure, which can lead to negative mood and emotion (Frame & Reichin, 2019). Moreover, an athlete who experiences more negative moods has a higher likelihood of recalling previous failures and shortcomings, as well as other negative and disappointing experiences (Frame & Reichin, 2019). The accumulation of negative cognitions and recollections could result in an athlete experiencing negative emotions at times when performance demands are high (Frame & Reichin, 2019). Mood plays a salient role in the emotional experience of athletes, and while a positive mood can amplify confidence and exhilaration while simultaneously mitigating disappointment, a negative mood can diminish excitement to "play" while exacerbating feelings of failure (Frame & Reichin, 2019). In addition, changes in feelings and perceptions of an athlete can elicit behavioural changes, such as difficulties in communication and outward expressions of emotion (i.e., hostility or unfriendliness), which can have an influence on performance (Kemarat et al., 2022).

There are numerous studies that show the negative effect that cognitive anxiety has on the performance of athletes. For example, in a series of studies there was a negative correlation found between cognitive anxiety and the performance of athletes from various sports, such as hockey, basketball, football, and taekwondo (Parnabas et al., 2015a; Parnabas et al., 2015b; Parnabas et al., 2015c; Parnabas et al., 2015d). The literature regarding cognitive anxiety's affect on athletes also extends to emphasize the impacts on both males and females and some of the stereotypes that are present, yet inconsistent with results, yielding a need for further examination and assessment of the differences experienced by both male and female athletes. Grossbard et al. (2009) established that female athletes described higher levels of cognitive anxiety than their

male athlete counterparts, which validates previous research on commonly held beliefs that females tend to report greater symptoms of cognitive anxiety compared with males (Hagan et al., 2017; Martens et al., 1990). However, Hagan et al. (2017) found opposite results where elite female athletes reported lower intensities of cognitive anxiety symptoms compared with elite male athletes, which is similar to results that have been reported in other studies (Perry & Williams, 1998). Furthermore, elite female athletes reported lower levels of cognitive anxiety compared to non-elite female athletes, whereas elite male athletes exhibited higher levels of cognitive anxiety compared to non-elite male athletes. A possible reason for these findings could be due to the non-elite athletes lacking competitive experience and a corresponding lower emotional investment of personal expectations about upcoming tasks (Hagan et al., 2017) or that they may be less self-aware of their pre-competition symptoms and therefore may make less accurately reports (Hagan et al., 2017; Perry & Williams, 1998). However, this does challenge the notion that higher skilled athletes tend to experience lower levels of performance anxiety. In contrast to this finding, Parnabas et al. (2015) suggested that elite athletes tend to exhibit lower levels of cognitive anxiety. The next section will address some of the reasons why this claim is important in the field of sport psychology regarding the topic of performance anxiety, as well as what it means for people who are working with and supporting athletes at both elite and non-elite levels of sport.

Theoretical Models of Performance Anxiety

In the world of sport, athletes tend to conceptualize phenomena like emotion and performance anxiety as one of the most accentuated factors that is likely to influence the result of sporting events and competitions (Palazzolo, 2020). Therefore, performance anxiety is typically regarded as a “status quo” or “part of the game” for athletes. Performance anxiety is generally

accepted as part of the sporting experience. In terms of sport psychology literature, currently, there is no absolute consensus on a single model for explaining the relationship between anxiety and performance in sport, despite research being conducted amongst the scientific community for decades to better understand how these phenomenon's intersect (Frame & Reichin, 2019; Palazzolo, 2020). One of the reasons for the inconsistencies is a result of the interpretations of variables being measured (i.e., anxiety, emotional states, and performance), as well as the differences amongst the framework of studies (i.e., significance of competitions, level and exposure of the sports event, and characteristics of the athletes) in reference to the models proposed in the sport psychology literature (Palazzolo, 2020). Nonetheless, Ford et al. (2017) proposed some agreed upon tenets that have remained constant in terms of theoretical conceptualizations:

> 1) sport-related anxiety has an effect on performance; 2) depending on the individual and the situation, such effect on performance can be either negative or positive; 3) and the direction of such effect on performance is typically a result of individual's cognitive, behavioral, and physiological responses to the potentially stressful sporting situation. (p. 207).

One of the earlier theories in sports psychology (i.e., the Yerkes-Dodson law) suggested that the relationship between performance and anxiety could be understood through an inverted-U shape continuum, where either too low or too high amounts of arousal or anxiety leads to decreases in performance (Chaube, 2013; Ford et al., 2017; Frame & Reichin, 2019). However, performance is facilitated up to a certain, optimal point. Nonetheless, this model has been heavily criticized in more contemporary literature, which suggests that the model is overly simplistic and generalized to a level that does not take individual differences or subjective

measures (i.e., the bell curve is accurate for all individuals) into consideration (Frame & Reichin, 2019). Brewer (2021) posed questions that this model does not account for: Does some anxiety always lead to better performance, or can it get in the way? Have people accomplished things when they weren't anxious at all?

Another model, which was an improvised version of the original inverted-U (Frame & Reichin, 2019), is known as the Individual Zones of Optimal Functioning (IZOF). From this perspective, athletes have optimal zones of arousal and anxiety, specific to them (i.e., varying at the individual level), from which they function best allowing them to reach peak performances (Chaube, 2013; Ford et al., 2017; Frame & Reichin, 2019). This theory "accounts for individual differences in the degree to which athletes perceive a given level of arousal as optimal or nonoptimal" (Frame & Reichin, 2019, p. 227) and that not all athletes will respond in similar ways to stress, arousal, or anxiety (i.e., these constructs may not always be catastrophic to performance). For example, some athletes may have optimal zones in conjunction with higher levels of anxiety, while others may be the opposite (Chaube, 2013; Ford et al., 2017; Frame & Reichin, 2019). These models were instrumental in laying the foundation for newer multidimensional models to emerge (Ford et al., 2017).

One of the more prominent multidimensional models of performance anxiety is called the Multidimensional Anxiety Theory (MAT). As alluded to in previous sections, MAT is based on the premise that performance anxiety comes in two forms, which are independent variables. Somatic state anxiety, which is related to performance in a manner consistent with an inverted-U shape, and cognitive state anxiety, which is negatively related to performance (Chamberlain & Hale, 2007; Chaube, 2013; Ford et al., 2017; Frame & Reichin, 2019; Martens et al., 1990). Further, the literature on MAT also highlights that self-confidence, which shows a positive

correlation with performance, is an additional component to the model through factor analysis due to the development of the Competitive State Anxiety Inventory-2 (CASI-2) (Chamberlain & Hale, 2007; Hagan et al., 2017; Martens et al., 1990). Although there has been empirical support for the hypotheses that MAT proposes (Martens et al., 1990) there has been other empirical findings that have found support that is contradictory to these predictions (Hagan et al., 2017). The contradictions and lack of consistency in the anxiety literature could be attributed to a lack of accuracy in defining the concept of performance anxiety, as well as the deficient construct validity of the CSAI-2 subscales in opposition to the inclusions of further anxiety dimensions, such as direction and frequency (Hagan et al., 2017; Jones, 1995). Other criticisms of the model include performance measures being too imprecise, global, or universal (Chamberlain & Hale, 2007), as well as the fact that this theory attempts to explain a three-dimensional relationship between performance, cognitive anxiety, and somatic anxiety, via a two-dimensional model (Frame & Reichin, 2019). Given that the support for MAT is tenuous, this emphasizes the critical state of the MAT requiring further research studies and empirical testing (Hagan et al., 2017).

A further multidimensional model of performance anxiety is the catastrophe model. This model is considered a new and improved version of the MAT because the level of an athlete's cognitive anxiety is the determining factor for the size of the impact of physiological arousal (Frame & Reichin, 2019). While the catastrophe model retains the MAT's premise that somatic anxiety has an inverted-U relationship to performance, this is only true when an athlete has low cognitive state anxiety (Chaube, 2013; Ford et al., 2017; Frame & Reichin, 2019). Therefore, it is beneficial for performance if there are moderate amounts of physiological arousal (Frame & Reichin, 2019). Conversely, increases in physiological arousal when cognitive state anxiety is high can be detrimental to athletic performance (Frame & Reichin, 2019).

Additional models consist of the distraction model and the self-focus model, which attempt to explain choking under pressure. The distraction model postulates that when athletes face pressure performance decrements can occur due to the distractions from the task at hand (Frame & Reichin, 2019; Geukes et al., 2017; Merced, 2019). Athletes, especially at the elite levels, can experience psychological pressure in a myriad of different ways, which can be dependent on the sport and level of exposure to the public (Low et al., 2022). External pressure is a major factor to consider, which is why the distraction model highlights that athletes can direct their attention to task-irrelevant cues when their physiological arousal increases (i.e., the crowd) resulting in diverted attention away from performing to their highest capabilities, resulting in poorer performance (Frame & Reichin, 2019; Geukes et al., 2017; Merced, 2019). On the contrary, the self-focus model proposes that when athletes are under pressure their attention is directed towards skill execution itself, resulting in choking due to a more conscious effort towards attempting to perform "correctly" (Frame & Reichin, 2019; Geukes et al., 2017; Merced, 2019). Low et al. (2022) noted that anxiety and self-consciousness are experiences of internal pressure. Therefore, at elite levels of sport, where skill execution and performance are automatic processes (i.e., performing in a state of flow) given the amount of time elite athletes have put in learning a skill, conscious monitoring and controlling skill execution can lead to under performing (Geukes et al., 2017). Dispositional reinvestment is referred as the tendency of an athlete who is under pressure to consciously control and manipulate a well-learned skill (Geukes et al., 2017; Masters et al., 1993). Researchers report that athletes who score high on reinvestment are more likely to perform poorly in high stakes situations due to the fact that conscious control of skills interferes with optimal automatic skill execution (Geukes et al., 2017; Masters et al., 1993).

The final model that will be considered is the control model proposed by Jones (1995), which involves directional interpretations and cognitive appraisals (i.e., positive or negative) of competitive anxiety (Frame & Reichin, 2019; Hagan et al., 2017; Williams et al., 2021), and the concept of control (Jones, 1995). Here, the athlete's interpretation of intensity (i.e., amount of anxiety) and direction (i.e., whether anxiety is believed to be helpful or hindering to their performance) must both be considered (Chaube, 2013; Hagan et al., 2017; Williams et al., 2021). The frequency (i.e., amount of time an athlete spends on attending to symptoms of performance anxiety) is also a salient aspect of the control model (Hagan et al., 2017). These factors can determine how an athlete will perform and cope with performance anxiety (Chamberlain & Hale, 2007; Williams et al., 2021). However, there has been a limited amount of research attention on the comprehensive assessment of how some of the dimensions of performance anxiety unfold and affect athlete responses over time (Hagan et al., 2017).

From the control model perspective, the degree of an athlete's perception of their ability to control stressors (i.e., nature of sport or environment) determines the extent to which the stressor will be interpreted as debilitative (harmful) or facilitative (helpful) to successful athletic performance (Cheng et al., 2009; Frame & Reichin, 2019; Hagan et al., 2017; Jones, 1995). How an athlete conceptualizes their own performance anxiety is salient to understanding the relationship between their anxiety and their performance (Chaube, 2013). For example, conceptualizing anxiety as helpful can result in better performances. The last section of this chapter will examine this concept more thoroughly.

Conceptualization of Performance Anxiety Among Athletes

Have you ever witnessed performances by world-renowned elite athletes who are considered to be the best in their sport? If so, do they look nervous while they are performing?

Brewer (2021) highlighted a few prime examples of this by bringing awareness to Michael Jordan's tongue placement during his 60 point performances in the NBA or the size of Usain Bolt's smile during an Olympic races and 100 meter sprints. There are many reasons why these athletes may not look like they are experiencing performance anxiety, such as time spent perfecting their craft, experience, personality, existing coping strategies, demands of the situation and intensity of the activity, to name a few (Ford et al., 2017). And yet, they are. The difference is that these athletes view their anxiety as a driver and a motivator to perform well under the pressure of competition and consider it to be largely facilitative to their performance (Palazzolo, 2020). Contrarily, others may conceive their performance anxiety as something that hampers performance (Palazzolo, 2020). This section will explain the different factors that can contribute to how an athlete will conceptualize their performance anxiety as being either a hindrance or a catalyst to their performance.

Debilitative Versus Facilitative Anxiety.

When an athlete is participating in competition, there are a few variables that are important to consider when thinking about their interpretation of anxiety, including the demands that the situation is placing on the athlete, their available resources, and the consequences of the potential results or outcomes of the situation (Ford et al., 2017). As previously mentioned, Jones (1995) proposed the control model to explain the discrepancies between athletes who view their anxiety as debilitative compared to athletes who view it as facilitative. Frame and Reichin (2019) noted that an athlete's capacity for self-control can govern sport performances and the effects of anxiety. For example, when self-control strength is low there is a negative correlation between performance and anxiety. From this perspective, the degree to which an athlete's expectancies are unfavourable (i.e., no control, which results in negative expectancies of both ability to cope

and of goal attainment) is directly associated with negative appraisals of anxiety, leading anxiety to be perceived by the athlete as debilitative (Cheng et al., 2009; Frame & Reichin, 2019; Jones, 1995; Neil et al., 2006). Debilitative anxiety has been linked to higher rates of athlete burnout, reductions in sense of athletic accomplishment, and plummeted evaluation of sport overall (Frame & Reichin, 2019). It has been found that under extreme situations (i.e., critical performance required in high pressure environments) athletes tend to become overwhelmed and consider their anxiety as debilitative, leading to negative effects on performance (Cheng et al., 2009; Frame & Reichin, 2019; Neil et al., 2012).

Furthermore, Frame and Reichin (2019) suggested that interpretations of stress (i.e., threat-type versus challenge-type) from a cognitive-phenomenological approach is also important to consider because threat-type stressors can trigger negative emotions, which affects one's ability to effectively cope and result in impaired performance, whereas challenge-type stressors have the opposite effect. Performance specific situations may be perceived as stressful to some athletes, while others may not experience stress, depending on how the athlete appraises the scenario and on the intensity of the stressor. In order for an individual to experience stress, they must perceive an imbalance between their capability to cope with the stressor effectively and the demands required to cope with the stressor (Frame & Reichin, 2019). Under threat stress, heart rate has been found to increase, which can be disadvantageous to performance, while under challenge stress there were no changes to heart rate (Frame & Reichin, 2019). Another variation of this approach is highlighted by Zhang et al. (2018) where they advocated that athletes who approach competition and risk with enjoyment are more likely to have performance advantages over athletes who compete while simultaneously coping with bothersome fear and anxiety.

Conversely, an athlete interprets their competitive anxiety as facilitative when they feel that they have control over stressors, which means that they have positive expectations of both being able to cope and of their ability to attain their goals (Cheng et al., 2009; Jones, 1995; Neil et al., 2006). It's important to note that an athlete's facilitative interpretation of performance anxiety does not mean that they do not experience anxiety. In fact, Williams et al. (2021) reported that athletes can experience high levels of anxiety and still believe that it is facilitative to their performance. Research conducted on elite and non-elite athlete's interpretations of somatic and cognitive anxiety symptoms, as well as their self-confidence, has shown support for the control model where perceived control was directly related to having facilitative outcomes on performance (Cheng et al., 2009; Hanton & Connaughton, 2002; Hanton et al., 2003; Neil et al., 2006; O'Brien et al., 2005). Research also showed that the direction (i.e., interpretation) of anxiety is a stronger predictor of performance compared with intensity of anxiety symptoms (Chamberlain & Hale, 2007; Frame & Reichin, 2019; Neil et al., 2012; Williams et al., 2021).

A cognitive appraisal of anxiety symptoms as being facilitative is robustly related to superior performances (Chamberlain & Hale, 2007; Frame & Reichin, 2019; Neil et al., 2012; Williams et al., 2021). This finding is attributed to an athlete's level of self-confidence (Frame & Reichin, 2019; Neil et al., 2006; Neil et al., 2012). However, Chamberlain and Hale (2007) argued that there is a need for more valid measures of sport emotion for sport psychology researchers and practitioners to use in order to accurately measure debilitative and facilitative perceptions of performance anxiety, which may result in more concise predictions of performance so that more effective interventions can take place. One of the factors that can determine whether an athlete interprets their anxiety as being debilitative or facilitative is confidence in self (Cheng et al., 2009; Williams et al., 2021).

Self-Confidence.

Confidence in sport can be defined as an athlete's belief and trust in their ability to perform well on challenging tasks (Juezan & Osorno, 2022; Woodman & Hardy, 2003). That is, confidence is a reflection of an athlete's certainty of achieving success. Self-confidence includes an athlete's capacity and ability to recover from mistakes in performance, as well as to show resiliency in the face of adversity and setbacks (Juezan & Osorno, 2022). Just as performance anxiety can have a direct impact on performance, levels of self-confidence can also have a significant influence on it (Hagan et al., 2017; Juezan & Osorno, 2022). Moreover, the perception of control over an athlete's own actions, tendencies, and environment (i.e., goal attainment expectancies) is directly connected to the robustness of self-confidence, where higher confidence in self equals more facilitative interpretations of performance anxiety and vice versa (Hagan et al., 2017; Hanton & Connaughton, 2002; Jones, 1995; Kjormo & Halvari, 2002; O'Brien et al., 2005; Williams et al., 2021). Given the ability of self-confidence to dictate one's interpretations of anxiety, this demonstrates its capability of preventing, mitigating, and protecting against the debilitative effects of anxiety (Hagan et al., 2017; Neil et al., 2006; O'Brien et al., 2005; Robinson & Freeston, 2015; Williams et al., 2021). The relationship between confidence and anxiety highlights the importance of self-confidence among athletes and gives support for the control model.

Another model that infuses sport confidence into its framework is the MAT. Cheng et al. (2009) reported that the elements measured in the CSAI-2 (somatic and cognitive anxiety, and self-confidence) are directly correspondent with the main dimensions in their proposed framework of competitive anxiety, which include cognitive and physiological symptoms of

anxiety, as well as perceived control. It does not take an expert to see the overlap and interconnections made.

A plethora of studies have found that the relationship between performance anxiety and self-confidence is significant as self-confidence reveals a positive correlation with performance in sport (Chamberlain & Hale, 2007; Geukes et al., 2017; Hagan et al., 2017; Hanton et al., 2013; Martens et al., 1990; O'Brien et al., 2005; Robinson & Freeston, 2015; Williams et al., 2021; Woodman & Hardy, 2003). Furthermore, athletes who display higher levels of self-confidence in their ability to perform report having lower anxiety levels, which also suggests that confidence and anxiety can have an inverse relationship (Hagan et al., 2017; Hanton et al., 2013; Juezan & Osorno, 2022; Kang & Jang, 2018; Kjormo & Halvarti, 2002; Robinson & Freeston, 2015; Williams et al., 2021).

Robinson and Freeston (2015) found that an athlete's intolerance of uncertainty (i.e., an inability to tolerate uncertainty, which is a moderating factor of anxiety) has a positive relationship with performance anxiety, while being negatively correlated with self-confidence. In conclusion to their findings, increasing tolerance for uncertainty in athletes is suggested as a catalyst for bolstering self-confidence and mitigating the debilitating effects of performance anxiety (Robinson & Freeston, 2015). The discrepancies between gender and confidence is interesting, as elite female athletes have been found to have more facilitative interpretations of their somatic anxiety, less frequent somatic anxiety symptoms, and less cognitive anxiety, while also exhibiting higher levels of self-confidence, which supports the notion of confident coping (Hagan et al., 2017). Some of the noted contributing factors to higher confidence in elite female athletes include higher perceived pressure and expectations, as well as more frequent external distractions on behalf of male athletes, which could render their self-confidence as peculiarly

fragile (Hagan et al., 2017). Hagan et al. (2017) reported that when compared with female athletes, male athletes indicated lower levels of self-confidence, which is a possible explanation for their higher interpretations of debilitative somatic anxiety responses. However, the research conducted seems to be inconsistent, which highlights another area in need of further exploration, especially regarding elite female athletes.

To summarize these concepts, Williams et al. (2021) noted that having more robust confidence in self is analogous with facilitative interpretations of anxiety symptoms, lower levels of performance anxiety, and higher calibre performance. It is important to consider how traits and personal dispositions can affect the relationships between anxiety, performance, and confidence (Williams et al., 2021). Therefore, more research needs to be done to avoid generalizing many of these findings.

Another variable that can have implications for whether or not performance anxiety is deemed by an athlete as debilitative or facilitative is both the level of sport and one's competitive experience (O'Brien et al., 2005). This will be examined in the last section of this chapter.

Elite Versus Non-Elite Athletes.

What separates elite athletes from non-elite athletes? The simple answer to this question may revolve around skill level, which is revealed in performance outcomes (i.e., the score of a game or an individuals statistics) in sports (Beilock & Gray, 2012). However, there is much more than meets the eye when it comes to the discrepancies between the two. Firstly, skill levels are higher in elite athletes due to both experience and time spent practicing their sport and honing their skills, which is broadcasted through movement patterns (Beilock & Gray, 2012). Chaube (2013) mentioned that non-elite athletes have a higher likelihood than elite athletes of experiencing performance anxiety that interferes with their abilities and affects performance in a

negative way during competition due to a lack of experience and in managing their levels of arousal. Whereas Neil et al. (2006) noted that amateur athletes tend to interpret their anxiety symptoms as debilitative and may only rely minimally on psychological coping skills and strategies, such as primarily relaxation interventions. Another factor that separates experts from novice athletes is their mental capacity. Some researchers have suggested that cognitive control structures that exert control over performance distinguish elite athletes from their non-elite counterparts (Beilock & Gray, 2012). Woods et al. (2014) noted that an athlete's ability to swiftly and precisely process sport-specific information during participation is a defining indication of expertise, as experts tend to be faster and more accurate than novices when engaging in their respective sports. These factors (i.e., experience and cognitive capacity) are important to consider when thinking about how performance anxiety can be interpreted differently by elite versus non-elite athletes.

Relative to their non-elite counterparts, elite athletes from across all sports tend to have stronger motivation to achieve success (Kjormo & Halvarti, 2002), higher rates of self-confidence, and more frequent facilitative appraisals of somatic and cognitive state anxiety symptoms (Frame & Reichin, 2019; Hagan et al., 2017; Hanton & Connaughton, 2002; Hanton et al., 2003; Hatzigeorgiadis & Biddle, 2008; Kjormo & Halvarti, 2002; Neil et al., 2006; Robinson & Freeston, 2015; Samuel et al., 2018; Souter et al., 2018), even though it has been found that elite and non-elite athletes report no significant differences in the intensity level of anxiety responses (Hanton & Connaughton, 2002; Neil et al., 2006). However, other studies have reported that elite athletes disclose lower intensities of anxiety (Hagan et al., 2017; Hanton et al., 2003; Kjormo & Halvarti, 2002; Robinson & Freeston, 2015), which highlights a need for further research to understand this relationship better.

Despite the lack of consensus on the intensity aspect of performance anxiety, there seems to be a plethora of literature explaining and outlining the reasons that elite athletes appear to have fewer difficulties with performance anxiety. Carson and Collins (2016) proposed that there could potentially be a fourth dimension to performance anxiety, skill establishment, which is comprised of skill level and consistency of movement, as well as an athlete's self-confidence, and has a significant impact on the adverse effects of performance anxiety. However, they also outline that motoric influence – such as hyper attention towards well-learned and established skills – may be misrepresented in the literature, which states that self-focus always leads to negative performances (Carson & Collins, 2016). In addition to establishing higher skill level, athletes can also learn to perceive anxiety as facilitative by avoiding ineffective coping strategies (i.e., avoidance) and practicing adaptive cognitive and behavioural tools before, during, and after competitions (Frame & Reichin, 2019). The strategies an athlete employs to cope with performance anxiety can vary depending on a performers skill level, which determines the interpretations of anxiety symptoms being experienced. Therefore, elite athletes may utilize psychological coping mechanisms more frequently and effectively (i.e., imagery, self-talk, mindfulness, positive interpretations, and goal setting), which can enhance levels of self-confidence and, consequently, protect against the debilitating effects of performance anxiety (Neil et al., 2006). Other research in support of this notion suggests that elite athletes can quite often view cognitive anxiety as debilitative initially. However, this mechanism triggers specific strategies that allow the athlete to overcome the debilitating effects and interpretations of anxiety, while replacing them with more facilitative ones (Hanton & Connaughton, 2002; Hanton et al., 2003).

In conclusion of this chapter, Chaube (2013) highlighted some of the common causal elements that have been connected with the experience of performance anxiety, including considering the possibility of failure or loss, a felt need to avoid failure and loss, uncertainty and precariousness regarding the outcome of competitions, a focus on self, and perceived pressure due to the presence of significant others. Given the complexity of performance anxiety, there is not one simple answer or cause that can be attributed to its presentation, nor is consensus or agreement achievable for what causes are viewed as most significant (Chaube, 2013). Rather, there are many variables, influences, and explanations for why an athlete experiences performance anxiety, which were examined and analyzed throughout this chapter. Some of these factors included a predisposition to anxiety; situational anxiety; physiological and cognitive symptom effects; interpretation of anxiety; level of sport; insufficient experience, skill, or confidence, as well as lack of control, which can result in negative thoughts, poor self-esteem, anticipation of criticism or punishment, feelings of inadequacy, or loss of status (Chaube, 2013). Further, performance anxiety can be exacerbated if it is not properly managed or treated through appropriate and necessary practice and preparation habits (Chaube, 2013). The next chapter will provide an informed recommendation for treatment interventions that have been proven as effective for managing and coping with performance anxiety, including proactive ways. These practical applications will be useful for not only practitioners and therapists working directly with athletes, but also athletes themselves, coaches, trainers, other team personnel, teammates, friends, and parents (i.e., anyone who is involved in an athletes sporting contexts and environments).

Chapter 3: Discussion and Applied Practices

In regard to the topic of performance anxiety in sport, the first two chapters sought to explore how it is defined, how and why it is experienced, and how it is conceptualized and talked about amongst researchers working in the field, as well as by athletes themselves. More specifically, chapter two provided a critical analysis of the existing literature on performance anxiety through answering the research questions that were presented in chapter one: What are some of the theories about performance anxiety? Who experiences it and who is most prone? What are the differences between debilitative and facilitative performance anxiety and how does each affect the quality of performance? What causes performance anxiety? What mitigates it? If you consider the first two chapters as the *what* and the *why* of performance anxiety, the third chapter can be thought of as the *how* in terms of managing it.

As we have seen from the research that has been brought forth throughout this paper (Chaube, 2013; Frame & Reichin, 2019; Ford et al., 2017; Hagan et al., 2017; Jones, 1995; Neil et al., 2006; Robinson & Freeston, 2015; Williams et al., 2021), there are many contributing factors for performance anxiety in athletes, including an athlete's conceptualization of their competitive anxiety as being either debilitative or facilitative, the confidence in themselves and their abilities, and the level of sport and competition, which is correlated with how much experience an athlete has in their respective sport (i.e., elite athletes having more experience than amateur athletes). The complexity and number of reasons for explaining the experience of performance anxiety are important considerations. Firstly, it provides insight for how performance anxiety is understood, which is an important step in effective management (Rowland et al., 2021). Having an in-depth comprehension of performance anxiety can elicit specific interventions (Rowland et al., 2021). Additionally, knowing what more experienced and

elite athletes are doing to mitigate and overcome the debilitating effects of performance anxiety and pressure can allow other athletes who may struggle with these phenomena to approach them in a more astute way (Frame & Reichin, 2019; Neil et al., 2006; Woods et al., 2014).

This third and final chapter seeks to answer how the research reviewed in chapter two can be applied to practice: What determines how an elite athlete will conceptualize performance anxiety and how does that understanding help athletes cope more effectively? What are the most effective ways of coping with performance anxiety and managing perceived pressure? In this discussion around applied practices, informed recommendations will be provided for how to work with performance anxiety and manage it at an optimal level in order to facilitate maximum potential and performance. This chapter will include a few of the many empirically validated interventions and strategies for sport counselling, which can also be applied by sports personnel and athletes themselves. This discussion will not only be helpful for health professionals working with athletes from a mental health and performance perspective, but can also be a useful tool for athletes, coaches, trainers, and other people involved in the care and support of athletes.

Psychoeducation of Performance Anxiety

Understanding and Addressing Anxiety

In order to effectively treat performance anxiety, it must first be understood. Understanding performance anxiety was one of the main objectives of the first two chapters. The construct of anxiety in the context of sport is not a static or simple phenomenon. Rather, it is consistently changing as a result of the constant fluctuation in athlete's environments, internal states, and attributions, and is therefore considered to be multidimensional (Hagan et al., 2017). Athletes experience emotional responses to an embodied process, which unfolds and shifts over time, especially as the time of competition draws closer (Hagan et al., 2017). The fluctuation of

emotion in athletes provides applied practitioners with athlete specific cues (i.e., responses and reactions in the form of either somatic or cognitive anxiety) in order to assist in preparations and addressing pre-competitive anxiety symptoms as events approach (Hagan et al., 2017). Given the multitude of factors contributing to anxiety along with the evidence examined thus far regarding the significant impact it can have on athlete's performances, mental health professionals, such as psychologists, counsellors, mental performance consultants, and performance coaches, can play a pivotal role in generating, establishing, and utilizing theoretical interventions that address and help athletes manage difficulties and struggles resulting from performance anxiety (Beilock et al., 2017). Frame and Reichin (2019) explained that physical performances in sport can be significantly improved through the regulation and reduction of the emotion of anxiety.

Understanding Athlete's Relationship to Anxiety

A modulating factor of how performance anxiety can affect an athlete is their relationship to it, which can be dependent on the level of sport (i.e., elite versus amateur), skill level, and experience of the athlete within their respective sport (Neil et al., 2006). As noted in chapter two, being an elite athlete can be a robust factor for whether performance anxiety is evaluated as debilitative or facilitative. It's important to note that this does not mean that they don't experience performance anxiety. Rather, elite athletes tend to utilize psychological and physiological coping mechanisms more effectively and frequently since that they have more experience in their sport and with performing, especially at the highest levels needed in order to reach an elite level (Neil et al., 2006). For example, Neil et al. (2006) assert that strategies such as positive self-talk, imagery, mindfulness, goal setting, mental rehearsal, thought stopping, and positive interpretations can enhance an athlete's level of self-confidence, which mitigates the debilitating effects and interpretations of performance anxiety. Furthermore, employing a range

of psychological strategies to maximize performance and combat the negative effects of competitive anxiety has become a fundamental aspect of athlete's pre-performance rituals and preparations for both practices and competitive events (Ford et al., 2017; Rowland et al., 2021). When these cognitive restructuring techniques are implemented they give athletes the opportunity to interpret their anxiety as facilitative to their performance.

Normalizing the Experience

Acknowledging, normalizing, and validating athlete's experience of performance anxiety is one step to shifting the belief that anxiety is unwanted and can have a negative effect on performance outcomes (Ford et al., 2017). For example, Rowland et al. (2021) mentioned that by focusing on the normality of making mistakes, athletes can mitigate the debilitating aspects of pressure and performance anxiety. Normalizing mistakes can allow them to avoid ruminating on the negative aspects of performance and focus on what's to come (Rowland et al., 2021). It also works towards breaking barriers and stigmatization associated with help seeking regarding mental health (Gucciardi et al., 2017).

Gucciardi et al. (2017) asserted that negative experiences, poor mental health literacy, and stigmatization are all considered to be salient barriers among both young and elite athletes in terms of the under utilization of help seeking for mental health. Some athletes have the conceptual idea that others (i.e., other athletes, teammates, or coaches) will evaluate their help seeking as a sign of personal weakness, deficiency, or being psychologically unfit to perform at elite levels, which sheds light on the need for psychological services to address mental health issues and performance within sporting contexts (Gucciardi et al., 2017).

There are many factors that contribute to athlete's attitudes towards performance consulting and counselling services, such as gender, age, sport type, and culture (Gucciardi et al.,

2017). Sociocultural factors, which vary across culture, context, or time, may contribute to what is considered to be healthy in terms of mental health (Gucciardi et al., 2017). Furthermore, cultural values, norms, and beliefs about mental toughness with specific sporting contexts can reduce help seeking intentions and foster idealized forms of masculinity (Gucciardi et al., 2017). For example, as compared to their male counterparts, females tend to manifest higher tolerances towards help seeking behaviour and the stigmatization associated with mental health, which elicits a stronger likelihood of being open and showing vulnerability to discussing their issues (Gucciardi et al., 2017). Nevertheless, on behalf of athletes, coaches, and other sporting personnel there may be a greater willingness and attraction towards engaging in open dialogues about mental health and anxiety symptoms if it is labelled and marketed as mental toughness development, as opposed to mental health or counselling services on account of perceived judgement from others regarding mental health stigmatization (Gucciardi et al., 2017). Mental health and mental toughness share a conceptual overlap in terms of addressing stress, adversity, and anxiety, which can lead to more positive functioning (Gucciardi et al., 2017; Low et al., 2021; Low et al., 2022; Rowland et al., 2021; Vidic, 2021; Williams et al., 2021).

For these reasons, normalizing and validating athlete's experiences of mental health difficulties and concerns, such as performance anxiety, can aid in reducing the stigmatization amongst the population of athletes, which could result in higher degrees of help seeking intentions and behaviours (Gucciardi et al., 2017).

Skills Training

When an athlete is having success in sport they are generally performing at par with, or above specific standards set by specific sporting contexts, while also avoiding potential disruptions or disturbances from external sources (i.e., spectators) or internal sources (i.e., bodily

or cognitive responses) throughout competition (Bühlmayer et al., 2017). The preparation for performance not only includes a physical capacity for readiness but also a psychological dimension, as they tend to complement one another (Bühlmayer et al., 2017; Rowland et al., 2021). Some techniques that are used when working with athletes in order to reduce performance anxiety include self-distraction, redirecting focus onto what is within one's control, being present rather than future oriented, focussing on the process rather than the result, self-acceptance as opposed to self-doubt, and positive approach goals in contrast to negative avoidance goals (Chaube, 2013). Coaches and trainers can also play a role in alleviating athlete's anxiety through coaching-led approaches such as mastery approach to coaching, which involves using positive correction, reinforcement, and encouragement in order to empower athletes to overcome mistakes and utilize coping strategies autonomously (Rowland et al., 2021). This supportive approach also emphasizes effort over outcome, which is an important factor in allowing athletes to develop personalized goals, reducing unhelpful competition between teammates, and to promote enjoyment and fulfillment (Rowland et al., 2021).

Psychological skills training is a focal area for athletes in both training and competition (Rowland et al., 2021), which includes the mental preparation that an athlete engages in. Some examples include cognitive-behavioural techniques, mindfulness, progressive muscle relaxation, arousal/breath control, biofeedback, self-talk, routines, mental rehearsal, mental imagery, visualization, and goal setting (Bühlmayer et al., 2017; Chaube, 2013; Rowland et al., 2021) and can be a significant determinant of performance outcome (Bühlmayer et al., 2017). Mental skills training involves learning and practicing cognitive skills that can strengthen an athlete's ability to regulate their own thoughts, emotions, and performance (Chaube, 2013). For example, in their meta-analysis of the efficacy of psychological interventions on performance anxiety in sport,

Ong and Chua (2021) found robust evidence for mitigation and reduction of performance anxiety in athletes. Furthermore, a study by Vidic (2021) regarding the impact of psychological skills training and mindfulness interventions over the course of a full hockey season for a Division I men's collegiate ice hockey team revealed significant increases in athlete resilience, stress, mindfulness, and coping skills as measured by pre-season, mid-season, and post-season data. Qualitative results indicated that athletes perceived the interventions as beneficial for both performance in hockey and personal aspects of their lives (Vidic, 2021). This finding suggests that season long psychological skills training and mindfulness could be useful in helping athletes with performance enhancement and overall well being. The next two sections will explore various interventions for both somatic and cognitive anxiety.

Considerations for Somatic Anxiety

Acceptance and Mindfulness

Mindfulness practice has become a routine complementary mental skills training approach for athletes in pursuit of high quality performances (Bühlmayer et al., 2017). Mindfulness techniques can assist athletes and performers in various ways, such as staying present and in the moment, as well as bolstering attention, concentration, and focus on task accomplishment. Furthermore, mindfulness practice emphasizes a nonjudgmental perspective and can serve to drown out distracting thoughts, such as consequences of mistakes, errors, and failure (Rowland et al., 2021). In order to achieve a state of mindfulness, athletes may employ one of several techniques, including mental imagery (i.e., perceptual visualization despite the absence of sensory input), relaxation, meditation, yoga, quiet eye training (i.e., visual fixation on specific targets prior to performance), or controlled breathing exercises (Rowland et al., 2021).

Given that mindfulness and acceptance based models and programs have been a part of sporting and performance contexts over the past 20 years, they are highly researched and effectively established interventions for performance enhancement and managing the effects of performance anxiety, with a solid foundation of scientific and applied empirical support (Bühlmayer et al., 2017; Dehghani et al., 2018; Gardner & Moore, 2019; Rowland et al., 2021; Tebourski et al., 2022; Vidic, 2021; Widhi Harit et al., 2022). Not only has empirical data to date demonstrated the efficacious results and outcomes with respect to promoting personal well being and athletic performance, but these empirically driven techniques have also supported mechanisms for change and have uncovered neurocognitive implications (Gardner & Moore, 2019).

A combination of studies conducted by Tebourski et al. (2022) on the effects of mindfulness on sport performance found that, compared with a control group, mindfulness skills in the experimental group improved free throw accuracy in basketball games and ranking points in table tennis. Another study revealed that mindfulness and acceptance and commitment-based approaches are effective interventions for mitigating performance anxiety and increasing athlete performance (Dehghani et al., 2018). Moreover, other studies have also found that mindfulness and progressive relaxation training decrease competitive state anxiety (i.e., somatic and cognitive anxiety), and, simultaneously, increasing self-confidence (Widhi Harit et al., 2022) and raising sports performance (Liang et al., 2021), respectively.

Lyon and Plisco (2020) delineated how elite athletes are a part of a unique population at a heightened risk for negative cognitions and perfectionism due to a number of factors, including rigorous training schedules, social isolation, and overwhelming pressure and expectations to represent ideal images and perform at a high levels. As such, they establish that in addition to

mindfulness playing a salient role in managing performance anxiety, self-compassion also significantly predicted an athlete's level of flow, which even surpassed the predictive value of mindfulness (Lyon & Plisco, 2020). The practical aspect about mindfulness practices is that they can be utilized at any time and any place and can be discreetly incorporated into athlete's pre-performance routines.

Routines

Pre-training and pre-competition routines have become an integral part of the athlete experience in preparing to perform. There are a wide variety of routines that athletes engage in, which is usually person specific and depends on the type of sport. An athlete's pre-performance routine consists of task and sport relevant thoughts and actions that aid in their preparation for performance execution (Rupprecht et al., 2021) and can aid in managing anxiety, enhancing focus, and increasing perceived control and confidence in self (Rowland et al., 2021). Routines can include activities such as preparing athletic gear and equipment (i.e., taping a stick), pre-shot routines (i.e., free throws in basketball or field goals in football), and stretching and warming up muscles prior to intense activity.

Behavioural interventions that can be included as part of routines can be comprised of mental rehearsal or practice, relaxation techniques, mindfulness, quiet eye training, trust monitoring, or imagery, which all have shown to be effective for performance and mitigating the debilitating effects of pressure and anxiety (Bühlmayer et al., 2017; Chaube, 2013; Neil et al., 2006; Rowland et al., 2021). For example, quiet eye training involves the use of visual control and athletes who practice this technique tend to have enhanced visual attention, increased accuracy, and are more likely to maintain high levels of performance, especially under pressure (Rowland et al., 2021). In their meta-analysis, Rupprecht et al. (2021) reported that the literature

provides support for the benefits of pre-performance routines and that they are effective in the mitigation and regulation of performance anxiety, which is directly related to the optimization of performance in sport.

Imagery

Much of the literature on the use of imagery supports its utility as a versatile technique for skill development and motor performances, as well as its effectiveness across a range of skills and abilities (Lindsay et al., 2019; Mizuguchi et al., 2012). Filgueiras et al. (2018) noted that mental imagery can be separated into two constructs: visual and kinaesthetic imagery. Visual imagery incorporates visualization of action execution with special attention towards the highest level (i.e., most ideal outcome) of performance, whereas kinaesthetic imagery involves mentally rehearsing proprioception (i.e., the motion and control of one's own body) and the sensations of movement execution (Filgueiras et al., 2018). Imagery interventions seemly play a key role in the mediation between confidence and performance anxiety interpretation. For example, interpreting performance anxiety as facilitative and having greater confidence are both outcomes when athletes use imagery interventions (Williams et al., 2021), which can include visualizing how an athlete will cope with performance anxiety and pressure. Greater imagery ability is also positively associated with a higher quality of performance (Simonsmeier et al., 2020; Williams et al., 2021), with the effectiveness of imagery interventions being associated with intensity of training and practice (Simonsmeier et al., 2020).

Imagery is also considered to be most effective when it is combined with physical practice, as compared to imagery or physical practice on their own (Lindsay et al., 2019; Simonsmeier et al., 2020). For example, a counsellor working with an athlete on mental imagery could discuss specific goals and targets to focus on in training so that come time for competition,

athletes will have done both. Additionally, Mizuguchi et al. (2012) explained that professional athletes tend to utilize imagery more often that their amateur counterparts, and the majority of elite athletes (70-90%) report using imagery techniques to improve performance. Elite athletes not only engage in practicing physical skills during their training sessions but also their mental skills, including replicating what competition may feel like (i.e., pressure).

Practice Under Pressure

As with any activity one might do, practice is the only way of improving skills and increasing experience. Performance anxiety and pressure are no exception. Chaube (2013) share that compared with seasoned professionals, amateur athletes have a higher likelihood of experiencing debilitating performance anxiety (i.e., it interferes with their ability to perform), which can be attributed to a relative lack of experience in both competition and managing anxiety and levels of arousal. Alongside the research comparing elite versus non-elite athletes throughout this paper, it makes sense that elite athletes cope with performance anxiety more productively because they have had more exposure to it.

Low et al. (2021) argued that rather than depending on copious amounts of practice, coaches and trainers could create pressurized training environments to allow athletes to adjust to pressure. Utilizing exposure interventions can elicit positive experiences and capacity building to manage responses in anxiety provoking domains under controlled conditions (Beilock et al., 2017; Low et al., 2022). This training is important because an athlete's ability to adapt to perceived pressure and successfully manage performance anxiety decreases the occurrence and impact of choking under pressure (Rowland et al., 2021). However, it is important to note this does not necessarily decrease the magnitude of pressure that athletes feel during competition (Low et al., 2022).

A commonly used strategy, often by coaches and trainers, is to create pressure scenarios during practice (i.e., simulated or real) in order to condition athletes to experience performing under pressure (Rowland et al., 2021). Experiencing pressure in training will help athletes adjust to performing under pressure in competition because they will have the opportunity to practice coping and management skills, change their relationship with pressure, and increase the quality of their training (Low et al., 2022). Replicating the conditions that athletes face in competition, such as structuring the physical surroundings or nature of practice, could provide athletes with exposure to demands that resemble the experience of competition settings (Low et al., 2022). For example, coaches and trainers may "change the task (i.e., rules of a drill), environment (i.e., noise), or performer (i.e., fatigue), but these physical or tactical demands do not increase pressure unless combined with consequences" (Low et al., 2022, p. 15).

Pressure can be created through impactful consequences, like increasing the importance of strong performances in drills, or by applying psychological demands, such as fostering competitiveness, requiring performance on demand, or adding in factors outside of the athlete's control (Low et al., 2022). However, increasing the difficulty of a drill does not denote an increase in perceived pressure as athletes may see diminishment in their performance without the feeling of pressure (Low et al., 2022). Furthermore, coaches and practitioners could collaborate to create pressure in training for athletes, and avoid the assumption that consequences that are unpleasant for athletes will automatically generate pressure (Low et al., 2022). Therefore, consequences need to be extended so that the impact will matter to athletes (Low et al., 2022). In studies conducted on athletes who experience pressure and anxiety in training, it was found that athletes who practice under varying levels of anxiety and pressure could prevent choking in competition under higher levels of anxiety and pressure, compared with athletes who did not

(Oudejans & Pijpers, 2009; Oudejans & Pijpers, 2010). Overall, there are many different interventions that could be helpful in managing the somatic effects of performance anxiety.

Considerations for Cognitive Anxiety

Goal Setting

Goal setting is an integral, ubiquitous part of being an athlete (Jeong et al., 2021; Williamson et al., 2022). Setting goals allows an athlete to create an objective that they can take action to aim towards (Williamson et al., 2022) and, simultaneously, foster motivation and improve performance (Jeong et al., 2021; Williamson et al., 2022). When engaging in goal setting, it's important for athletes to set specific, quantifiable, and achievable and realistic, yet challenging goals (Williamson et al., 2022). There are three main types of goals athletes typically utilize.

Process goals involve focusing on learning and developing specific techniques and skills; performance goals refer to working towards a specific standard in terms of performance; and outcome goals include a strict focus on results and outcomes of competition (Jeong et al., 2021). Jeong et al. (2021) reported that process goals have a larger impact on performance in comparison with performance or outcome goals. O'brien et al. (2005) noted that athletes who described positive expectations of goal achievement experienced greater self-confidence and more facilitative interpretations of performance anxiety, which can be attributed to being able to foster a more prominent sense of control and is regulated through consultation between coaches, trainers, and athletes. More specifically, in order to assist athletes in achieving facilitative interpretations of performance anxiety and positive perceptions of control over goal attainment, coaches could encourage them to manifest agency over the process of goal setting and input into the development of competition goals (O'brien et al., 2005). It is important for both coaches and

practitioners to be cognizant of the influence that goal setting can have on performance anxiety (O'brien et al., 2005). Depending on the type of goal setting that athletes engage in, they can control the direction of their focus and progression towards goal attainment. Goals can be achieved through physically completing tasks, as well as by being in a positive frame of mind.

Mindset

Ask any athlete how they approach competitions, and they will tell you about a variety of strategies they use to prepare, including having a healthy mindset. As explained in chapter two in the section on debilitative versus facilitative anxiety, the appraisal of anxiety is a stronger predictor of performance than the intensity (Chamberlain & Hale, 2007; Frame & Reichin, 2019; Neil et al., 2012; Williams et al., 2021). In essence, this encompasses how an athlete frames their perspective towards their anxiety. Reframing, or anxiety reappraisal, is a mindset intervention that incorporates a change in an athlete's way of thinking towards themselves (i.e., self-focussed) or about the anxiety that they may be feeling (i.e., anxiety focussed) before, during, or after competition (Beilock et al., 2017). For example, one could reframe being nervous to conceptualizing symptoms as excitability in the form of an adrenaline rush to aid in concentration (Clear, 2022).

Rowland et al. (2021) declared that cognitive interventions towards managing performance anxiety tend to dominate as the most widely applied psychological approach. From this perspective, cognitive reframing and restructuring towards experiences, moderating expectations of self, and increasing positive self-talk may all reduce the likelihood of choking under pressure (Rowland et al., 2021). For example, many of the interventions discussed thus far come from cognitive-behavioural therapy foundations, such as routines, goal setting, imagery, arousal control, and self-talk (Bühlmayer et al., 2017). Furthermore, confidence can be

maintained and bolstered through reframing unproductive thinking (i.e., faulty thinking, assumptions, or distorted beliefs) and turning it into productive thinking (i.e., positive thoughts and narratives about themselves; pragmatic self-talk; and accurate and objective assessments) for future scenarios (Rowland et al., 2021). These strategies can increase an athlete's belief in themselves; improve their sense of self-esteem and efficacy; and ameliorate their ability to cope with performance demands (Rowland et al., 2021). These strategies can support in breaking the cycle of the debilitating effects of performance anxiety (Rowland et al., 2021). If athletes can come to the realization that pressure is often a self-generated process, and that some aspects of it are within their control, then they can place more focus and emphasis on the quality of their performance and less on pressure as being a distraction or hindrance (Rowland et al., 2021).

In a study conducted on the relationship between performance anxiety, negative self-talk, and discrepancies between goals and performance on cross-country athletes, Hatzigeorgiadis and Biddle (2008) found that cognitive anxiety had a more robust relationship with negative self-talk in comparison with somatic anxiety. In addition, contrary to athletes who experienced their symptoms as debilitative, athletes who interpreted their anxiety as facilitative disclosed having less negative self-talk (Hatzigeorgiadis & Biddle, 2008). Along with the interpretation of anxiety as being a significant predictor of negative thoughts and self-talk, so too were discrepancies between goals and the quality of performance (Hatzigeorgiadis & Biddle, 2008). Other studies have shown that self-talk is an effective strategy for enhancing performance (Hatzigeorgiadis et al., 2011; Hatzigeorgiadis et al., 2009), as well as the reduction of performance anxiety and strengthening self-confidence (Hatzigeorgiadis et al., 2009). How athletes frame competition and their circumstances shape their perspective. It can be helpful if athletes are encouraged to develop a positive narrative about themselves and their capabilities. According to Doctor

Cassidy Preston, coaches, trainers, and practitioners can do meaningful work with athletes to empower them to take smart risks and to trust themselves, their training, and their abilities (Preston, 2023). It's important for athletes to feel supported when they are shifting their mindset from playing it safe (i.e., surviving and fearful) to being assertive (i.e., thriving and attacking) during competition (Preston, 2023). This will allow them to enjoy competition through focussing on the process, as well as letting go of the need to control the outcome and becoming more accepting towards a range of results (Preston, 2023).

To conclude this section, I would like to share a few perfect examples of how reframing has helped elite athletes. In her book, *Over the Boards: Lessons from the Ice*, Hayley Wickenheiser described the pressure that she and her teammates felt about representing team Canada in ice hockey at the Olympics as being the weight of a nation (Wickenheiser, 2022). However, the team decided to embrace it and reframed it as a privilege rather than a burden (Wickenheiser, 2022). Some may remember "the guarantee" that Mark Messier so confidently gave to the hockey world in the 1994 Stanley Cup Playoffs, stating that he guaranteed a victory for the cup (Messier & Roberts, 2022). In his book, he talks about how this bold statement could have had two drastically different outcomes. It could have exacerbated the pressure on both himself and his team and had adverse effects, or it could have conveyed the message that he had the utmost confidence in his team's capabilities and how they had prepared (Messier & Roberts, 2022). Fortunately for Mark, the latter was true and they prevailed in winning the Stanley Cup that year. Pressure can often be conceptualized as a negative influence on performance but on a healthy, successful team the opposite became true. They created a positive winning environment, which made everyone on the 1994 New York Rangers team better because they held one another accountable and refused to let each other down (Messier & Roberts, 2022). Lastly, a podcast

series was created based on the experience of a dominant forward line for the Vancouver Canucks of the NHL in the early 2000's known as the "west coast express", which was comprised of Todd Bertuzzi, Markus Naslund, and Brendan Morrison. In the podcast, Bertuzzi speaks about the pressure that comes with being the most dominant line in the NHL at the time, and shared how fun it was and that it never felt like pressure; rather, it was some of the easiest hockey he ever played (Rintoul, 2023). Naslund echoed Bertuzzi's experience stating that because it was so fun and easy to play they didn't have to think much, everything just came naturally (Rintoul, 2023). Morrison added that because of their experience and confidence, they had the ability to be difference makers every time they stepped onto the ice (Rintoul, 2023). As an athlete, and someone who loves sports and all they have to offer, I find that to be incredibly inspiring.

All three of these personal experiences for top-level athletes that are outlined here share one thing in common: each athlete has a strong mindset, and they all possess the ability to control the narrative around how they think about performance. The implications of witnessing athletes at the pinnacle of their sport are profound, and we could all learn from them.

Conclusion

This capstone project began with an introduction to the construct of performance anxiety in the context of sport, as well as the significance and importance of the concept. The research shared throughout this paper has shed light on the multidisciplinary aspects pertaining to performance anxiety, and how it affects athletes. The integration of research allowed me to analyse and assess some of the main reasons why performance anxiety affects some athletes and not others through the investigation of a few of the theoretical models and conceptualizations

among athletes themselves. To conclude this paper, a thorough examination of informed recommendations and best practices was done for managing and coping with performance anxiety. The purpose of this capstone project was to highlight the significance of performance anxiety as something athletes continually struggle with, oftentimes silently. My hope is that this paper offers something important to the field of counselling and practitioners work with athletes, as well as a helpful, informative tool that can be used by athletes, teammates, coaches, trainers, other sport personnel, family, and friends.

Concluding Personal Reflections

In my personal experience of being an athlete, especially at the elite level, I never had access to a resource like this nor was I aware of the difference and impact that managing performance anxiety could have had on my game. Therefore, my reasoning for writing about this topic has remained the same from the start. I have no doubt that a resource like this could have been helpful for my performance in hockey. This experience is one of the reasons why I am so passionate about this work. I see the benefits and I have a strong desire to help others, especially athletes who may be going through similar experiences to what I did.

Throughout this process I have not only developed a greater and more in depth understanding of performance anxiety in athletes, and how it effects both performance and mental well being, but I have also learned about some of the most effective strategies for helping athletes work through it. For example, I witnessed other athletes utilize imagery throughout my career and listened to some describe the positive effects and results that it had for them. Imagery was never a technique that I firmly grasped or knew how to use; nevertheless, it is something I always wished that I could have incorporated into my pre-performance routines more frequently

and effectively. Additionally, there was so much emphasis placed on performance and outcome goals, and the expectations that I placed on myself, as well as the expectations that were placed on me by others were too often unrealistic or unattainable, which resulted in significant declines in my confidence. Reflecting back on my career, I wish that I had a more balanced approach to the goal setting process, placing more emphasis and focus on the process in contrast with being exclusively focused on performance measures and outcomes. Nevertheless, there were some strategies that were implemented by my coaches or myself that I had never considered in terms of managing performance anxiety. One intervention I can vividly remember is practicing under pressure. This was usually something coaches did in order to ramp up the intensity and create game-like scenarios in practice. Oftentimes, creating pressure in training and practice also made it more fun.

Prior to writing this capstone I knew that I wanted to work with athletes in some capacity in my career. However, now that I have completed this project I feel an even higher motivation to pursue this kind of work in my practice. The learning that I have gained from my research and in writing this capstone will inform my work with athletes in the future.

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