TESTING THE DELIVERY EFFICACY OF A KNOWLEDGE MOBILIZATION TOOL DISTRIBUTING PRE-PERFORMANCE ANXIETY RESOURCES TO COACHES

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ABSTRACT

Knowledge mobilization (KM) is an essential element of sport psychology research, as effective KM increases the impact of research findings and helps to alter the landscape of applied practice. The Sport Psychology for Coaches (SP4C) website was created to act as a KM tool providing coaches of all demographics with reliable, evidence-based information and resources, while mitigating several barriers which contribute to the knowledge-to-action gap currently observed in the field of sport psychology (Gould, 2016; Holt et al., 2018). This study was designed to build upon the prior needs assessment conducted by Pope and colleagues (2015), and the subsequent pilot test conducted by Farhat and colleagues (2022), whereby coaches' interests, format preferences, and user habits were assessed. Guided by the Knowledge to Action framework (Graham et al., 2006), the purpose of the current study was to further assess the efficacy of the SP4C website by delivering novel information to coaches through two varying delivery methods; structured and unstructured. Data on coaches' knowledge and attitudes, coaching-related autonomy and competence, and intentions to use the information were collected to evaluate the efficacy of the website. Thirty-seven coaches (M_{age} = 38.4, $M_{experience}$ = 13.4 years, 56.8% coaching at competitive level) participated in the mixed methods longitudinal randomized controlled trial. Voluntary follow-up interviews were conducted to gain insight into coaches' individual experiences with the website and provided content, and to supplement the quantitative data collected. A series of one-way ANOVAs and ANCOVAs were conducted to assess quantitative data, and codebook thematic analysis was used to assess qualitative data. Results indicated that provision of the resources to coaches via the SP4C website increased their knowledge, positive attitudes, autonomy, competence, and intentions, a finding supported by coaches in their follow-up interviews. Further, provision of structured guidance in conjunction

with the resources enhanced the effect for both knowledge and competence. In their follow-up interviews, coaches supported this finding by highlighting how the structured delivery method helped them uptake the information and feel better able to apply it in practice. Together, our findings suggest that provision of sport psychology resources to coaches through the SP4C website is beneficial, and the provision of structure within the informal learning resource can enhance the degree of knowledge uptake occurring and help coaches feel more confident in their ability to implement the information in their practice.

CONTRIBUTIONS OF AUTHORS

Courtney Stevens – Conceptualized study design, conducted literature review, developed research questions, adapted scales and designed surveys, developed and distributed pre-performance anxiety management resources, completed and submitted ethics application, led recruitment, managed study organization, collected and analysed the data, interpreted the findings, and took lead role in writing the report.

Dr. Paige Pope – Assisted with: conceptualization of study design; development of research questions; development and review of pre-performance anxiety management resources; revision of ethics application; study management/organization; interpretation of the findings. Reviewed and contributed to drafts of the written report.

Dr. Scott Rathwell – Assisted with: conceptualization of study design; development of research questions; selection of philosophical assumption; data analysis and interpretation of findings.

Dr. Barbi Law – Assisted with: conceptualization of study design; development of research questions; development and review of pre-performance anxiety management resources; Google Analytics set up; management of the Sport Psychology for Coaches website; distribution of resources via the Sport Psychology for Coaches website. Reviewed and contributed to drafts of the written report (specifically Chapter Two).

ETHICS STATEMENT

Work described in this thesis received research ethics approval from the University of Alberta Research Ethics Board, Project Name “TESTING THE DELIVERY EFFICACY OF A KNOWLEDGE MOBILIZATION TOOL DISTRIBUTING PRE-PERFORMANCE ANXIETY RESOURCES TO COACHES”, Pro00132563, September 6, 2023.

PREFACE

The work presented in this thesis is based on the research of Courtney Stevens and was conducted at the University of Lethbridge through the Psychology for Active Living and Sport (PALS) lab. I, Courtney Stevens was the principal investigator and main contributor to all elements of the research and writing presented in this thesis, bearing responsibility for revision of the literature, study design, recruitment, data collection and analysis, interpretation of results, and composition of the thesis. Dr. Paige Pope of the University of Lethbridge supervised this project, providing guidance throughout the entirety of the process and feedback on all aspects. Further, Dr. Scott Rathwell of the University of Lethbridge and Dr. Barbi Law of the University of Nipissing provided feedback on the study design, guidance in the development of the resources created for the Sport Psychology for Coaches website, as well as methodological and theoretical suggestions to improve the strength of the project.

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List of Abbreviations

KM	Knowledge Mobilization
KTA	Knowledge to Action
SP4C	Sport Psychology for Coaches
PPA	Pre-Performance Anxiety
E-US	Experimental-Unstructured
E-S	Experimental-Structured
C-US	Control-Unstructured
C-S	Control-Structured
RoCKAS-CH	Rosenbaum Concussion Knowledge and Attitudes Survey – Coach Form
BPNSFS	Basic Psychological Need Satisfaction and Frustration Scale
MISII	Measure of Innovation-Specific Implementation Intentions
ANOVA	Analysis of Variance
ANCOVA	Analysis of Covariance
CI	Confidence Interval
TA	Thematic Analysis
PI	Principal Investigator

Chapter 1: Introduction

Within the field of sport psychology, there is a significant knowledge-to-action gap, in which research is being conducted, but findings are not being integrated into coaching practice (Leggat et al., 2023; Williams & Kendall, 2007). This disconnect is largely due to the inadequate dissemination of research, whereby findings are primarily distributed via journal articles and conferences (Leggat et al., 2023; Pope et al., 2015). These methods of information delivery present a series of barriers (e.g., time, finances, accessibility, knowledge, experience) that impede coaches' abilities to obtain, uptake, and implement the information effectively, thereby exacerbating the knowledge-to-action gap (Pope et al., 2015; Reade, Rodgers, & Hall, 2008; Reade, Rodgers, & Spriggs, 2008).

Knowledge mobilization (KM) is defined as the "flow and uptake of research knowledge between researchers, knowledge brokers, and knowledge users" (SSHRC, 2021). To undertake this process, bidirectional communication between researchers and knowledge users is essential, as it is suggested that user preferences and experiences should inform the adaptation of resources, with the goal of fostering a better educational environment that will allow for more productive KM (Holt et al., 2018; Leggat et al., 2023; Williams & Kendall, 2007). Prior work has established that coaches prefer informal (self-directed) methods of learning, such as websites (Nelson et al., 2006; Pope et al., 2015). However, little work has been done to understand the interactions between coaches and online sport psychology resources (Farhat et al., 2022), therefore, there is a lack of insight into how to effectively adapt and provide this kind of information to coaches to better support the implementation of it in practice. To address this, researchers require an understanding of coaches' experiences with information provision in order

to adapt knowledge mobilization resources to better support coaches' needs and preferences, and thus encourage the uptake of information (Leggat et al., 2023; Pope et al., 2015).

Given the importance of effective KM, Graham and colleagues (2006) developed the Knowledge to Action (KTA) framework, which outlines the sequential structure of KM and the essential elements for consideration when trying to disseminate research findings effectively. The KTA framework consists of two main components; knowledge creation and the action cycle (Graham et al., 2006; Holt et al., 2018). The Knowledge Creation component of the KTA framework highlights information development and synthesis, consisting of three phases through which all information passes; first-generation knowledge (e.g., primary study findings); second-generation knowledge (e.g., synthesized information cultivated via first-generation knowledge); and third-generation knowledge (e.g., creation of tools designed to disseminate information to knowledge consumers). The second component is the Action Cycle, consisting of six phases; (i) identify problems that need addressing, (ii) identify, review, and select research relevant to the problems (iii) adapt and tailor information to the relevant audience, (iv) monitor knowledge use, (v) evaluate knowledge use and outcomes, and (vi) support the continued use of knowledge (Graham et al., 2006; Holt et al., 2018). Together, these components focus on the development, synthesis, and distribution of information, as well as the assessment of interaction with, uptake, and retainment of knowledge by consumers, all of which are essential factors contributing to a strong understanding of KM efficacy.

In 2015, a needs assessment was conducted to gain insight into how coaches attained new information from sport psychology research (Pope et al., 2015). As prior work had determined coaches' preference for informal (self-directed) learning methods (Nelson et al., 2006), such as websites and online resources, Pope and colleagues (2015) looked at coaches' use

of online sport psychology resources and the content they sought out. It was determined that coaches with more experience, higher certification, and coaching at higher competition levels had greater use of online sport psychology resources at the time of assessment. The results of the assessment also indicated that coaches who faced more barriers to access (often those with less experience, less certification, and at lower levels of competition) were equally as interested in online resources as their counterparts, but lacked the knowledge, experience, and resources to attain the information (Pope et al., 2015), reiterating barriers which had previously been established (Reade, Rodgers, & Hall, 2008; Reade, Rodgers, & Spriggs, 2008). The needs assessment identified topics of interest to coaches, with information relating to anxiety emerging as a topic of significant interest (Pope et al., 2015). The needs assessment utilized prior findings and developed further first-generation knowledge, aligning with the first (identify problems that need addressing) and second (identify, review, and select research relevant to the problems) phases of the action cycle. Pope and colleagues (2015) concluded that development of a website providing sport psychology information to coaches would be a worthwhile venture, as a website would cater to coaches' pre-established preference for informal learning methods. Further, a website would help to mitigate several of the barriers often faced by those coaches with less experience, less certification, and fewer resources when trying to access evidence-informed sport psychology information.

The 2015 needs assessment paved the way for development of the Sport Psychology for Coaches (SP4C) website, a KM tool created to provide coaches with easily accessible, user-friendly, evidence-informed sport psychology information and resources. Aligning with the third phase of the action cycle (adapt and tailor research and knowledge to the relevant audience), and informed by first-generation knowledge, research findings were synthesized to develop second-

generation knowledge in the form of summaries, infographics, worksheets, and activities targeting a variety of topics (e.g., goal setting, imagery, concentration) that coaches could use and adapt to their coaching practice. These resources then contributed to third-generation knowledge (the SP4C website), which was made available to coaches.

Following development of the SP4C website, a pilot test was conducted to assess coaches' utilization habits and perceptions of the website, aligning with the fourth (monitor knowledge use) and fifth (evaluate knowledge use and outcomes) phases of the action cycle (Farhat et al., 2022). With eight participants, the pilot test examined how often coaches used the website, what resources they accessed and how often, what they liked and didn't like, and what improvements could be made (Farhat et al., 2022). Analytic data provided an objective measure of website utilization and results showed an average overall usage time of 25.25 minutes and a high interest in resources related to anxiety management (Farhat et al., 2022). Follow-up interviews were conducted, allowing coaches to discuss their experiences with and perceptions of the website. Overall, coaches expressed that the website was beneficial to their coaching practice, citing the available worksheets, user-friendly interface, and reliability of the information as reasons they felt the website was a valuable resource (Farhat et al., 2022). However, with only eight varsity coaches participating, all from the same institution, the findings – while positive – cannot be generalized beyond this specific group. Further, some coaches identified factors with the potential to limit the effectiveness of the website as a KM tool (Farhat et al., 2022). Self-directed learning provides coaches with the opportunity to autonomously manage their coaching practice and seek out situation-specific resources when they feel the need to do so (Reade, Rodgers, & Hall, 2008; Reade, Rodgers, & Spriggs, 2008), yet coaches expressed a lack of confidence in their personal ability to apply the information provided (Farhat

et al., 2022). Lack of guidance regarding where to start and how to proceed through the information was reported to be a key contributing factor to the sense of diminished confidence voiced by coaches (Farhat et al., 2022). While it was reported that the SP4C website presented information in ways coaches found comprehensible, some found the quantity and variety of information to be overwhelming (Farhat et al., 2022), creating a barrier to comprehension and implementation. Guidance and direction were identified as core themes of coaches' proposals for website improvement, as this could better support those who are unsure of how to begin or how best to move through the resources and help to maximize comprehension (Farhat et al., 2022). These findings suggested that informal, self-directed learning resources may be enhanced by the presence of structure, aligning with suggestions of prior work in the education sector (Ryan & Deci, 2020).

The current study aimed to build upon the previous needs assessment and pilot test by further assessing the efficacy of the website as a KM tool and addressing coaches' suggestions for more guidance and direction. As the action cycle is a fluid process whereby each phase can influence another (Graham et al., 2006), we hoped to support continued use of the SP4C website by adapting to the preferences and suggestions of coaches observed in the pilot test, revisiting phases three through five. To do this, we developed novel resources for the website and a structured guide designed to help coaches navigate through them.

Sport-related anxiety is a prevalent issue in the athletic population, as 30-60% of athletes report experiencing symptoms (Rowland & Lankveld, 2019). This widespread occurrence, along with the high rates of interest in anxiety-related information displayed by coaches in the needs assessment and pilot test (Farhat et al., 2022; Pope et al., 2015), guided our development of novel resources targeting pre-performance anxiety (PPA) in athletes. A review

of first-generation knowledge regarding PPA management was conducted and synthesized into second-generation knowledge in the form of summaries, infographics, worksheets, and activities for coaches to use in their practice to help athletes manage PPA (Stevens et al., in review; see Chapter 2). These resources were then made available to coaches participating in the current study via the SP4C website (third-generation knowledge). Further, an informative step-by-step, how-to guide was developed and provided to coaches. This guide was designed to help coaches navigate through the resources by highlighting where to start, how to proceed through the information, appropriate timing of interventions, and which strategies to use depending on the situation.

To assess the efficacy of providing the PPA resources via the SP4C website and the impact of the structured guide, we measured coaches' knowledge of and attitudes toward PPA, their coaching-specific autonomy and competence, and their intentions to implement the information. By evaluating these factors, we aimed to assess the degree of KM occurring via the website and determine whether provision of the guide had an effect. Further, follow-up interviews were conducted, providing insight into coaches' experiences with the website and guide. The purpose of this study was to gain a comprehensive understanding of the efficacy of the website as a KM tool delivering novel PPA resources to coaches through two varying delivery methods.

Chapter 2: Five Modules of Support: Pre-Performance Anxiety Management Strategies[1]

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[1] This manuscript is under revision by the Journal of Sport Psychology in Action and will be referred to throughout this document as *Stevens et al., in review*.

Abstract

Pre-performance anxiety (PPA) has been identified as an important psychological factor associated with changes in an athlete's behaviour, mindset, and performance. High standards of success and the need for optimal performance put athletes at a heightened risk of experiencing PPA. The purpose of this paper is to describe the process of developing resources for supporting agents within the athletic environment and provide examples of the user-friendly strategies and resources. Following a synthesis of the literature, five modules of strategies were established and presented in diverse formats to help supporting agents supplement their knowledge of PPA and utilize appropriate management interventions.

Introduction

Pre-performance anxiety (PPA) is a state of heightened distress and/or physiological arousal occurring prior to a sporting event or action in response to stimuli perceived by the individual as novel, threatening, or as having the potential to produce undesirable outcomes (O'Brien & Kilrea, 2021; Sanchez et al., 2010). PPA is prevalent in the athletic population, as 30-60% of athletes report experiencing feelings of anxiety in relation to their performance (Mesagno et al., 2008; Rowland & Lankveld, 2019). Anxiety can negatively affect an individual's working memory and sense of control, which in turn can lead to uncertainty, lack of confidence, and poor performance (Eysenck, 1992). Sport-related anxiety has been linked to burnout, a decreased sense of subjective well-being, and motivational deficits (O'Brien & Kilrea, 2021).

Purpose

When intense, PPA can produce behavioural, cognitive, and physiological symptoms, which can impact athlete well-being, contribute to poor performance outcomes, and increase the risk of injury (Ford et al., 2017; Patel et al., 2010). The subjective nature of anxiety can make it challenging for athletes to interpret their feelings correctly and therefore can impact their ability to cope with the symptoms (Hanton et al., 2008). Supporting agents (e.g., coaches, consultants, parents, organizations) possess the ability to influence an athlete's sporting experience, potentially impacting attitude, skill development, and well-being (Wekesser et al., 2021). Because of this influence, we felt that providing supporting agents with the knowledge and resources to introduce appropriate management strategies to athletes could help them cope with the adverse effects of PPA, consequently fostering enhanced thoughts, feelings, behaviours, and performance.

Due to the potential negative impacts of PPA and the interest in anxiety-related information demonstrated by supporting agents in prior studies (Farhat et al., 2022; Pope et al., 2015), the creation of resources to aid in the management of PPA was deemed an appropriate venture. Resources were created with supporting agents in mind, and structured to help address the barriers (e.g., time, financial restrictions, accessibility) that many supporting agents encounter when attempting to utilize sport psychology resources (Pope et al., 2015). Designed to be user-friendly, the resources provide concise, evidence-based, comprehensible information to supporting agents free of charge.

A narrative review of the literature was conducted to garner a breadth of information whilst not being constrained to a singular approach to sport-anxiety management. The literature search was conducted within the fields of sport and exercise psychology, kinesiology, and psychology, focusing primarily on information appropriate for supporting agents (e.g., strategies for managing clinical anxiety were excluded). Athletes' interpretation of anxiety symptoms was a recurring theme in the literature, emphasizing the importance of understanding how anxiety symptoms impact athletes individually (Neil et al., 2013; Ong & Chua, 2021; Thomas et al., 2007). Further, the importance of altering athlete's negative perceptions of anxiety symptoms was highlighted (Hanton et al., 2008; Neil et al., 2013; Rowland et al., 2021), as well as the efficacy of utilizing performance routines to manage PPA (Hanton et al., 2008; Mesagno et al., 2008; Rowland et al., 2021), and the role of sport-confidence in acting as a buffer to PPA (Machida et al., 2012; Ong & Chua, 2021; Vealey, 2009). The role of the support agent was also highlighted in several sources which emphasized that willingness of agents to adapt their approach and methods was essential to growing their abilities and practice to better support athletes (Cropley et al., 2023; Gilbert & Trudel, 2001).

Following the narrative review, strategies reported to be applicable and effective were selected and synthesized into five areas of focus to guide resource development: (1) Symptoms and Interpretation of PPA, (2) Self-Confidence Support, (3) Cognitive Restructuring, (4) Performance Routines, (5) Support and Reflection. For each module, multiple resources were developed, consisting of summaries, infographics, activities, and worksheets, with supplementary information framing the nature and pertinence of each resource to create an informative experience. While initially curated for coaches, the generalizability of the resources lends itself to many supporting agents (e.g., coaches, consultants, parents, organizations). The purpose of this paper is to describe the process of developing these resources and provide examples of the user-friendly strategies and resources for supporting agents to use as templates within their own practice.

Resource Distribution

These five resources were curated for publication on the Sport Psychology for Coaches (SP4C) website (sportpsychologyforcoaches.ca). The SP4C website is a knowledge mobilization tool previously created with the intent of providing digestible, evidence-based, and reliable sport psychology information to coaches on ten various topics (e.g., concentration, imagery, goal setting). In 2015, a needs assessment was conducted whereby coaches were surveyed and asked to report on their use of online sport psychology resources and the types of information of most interest to them (Pope et al., 2015). While coaches indicated a high interest in online resources, many faced barriers when attempting to access these resources (e.g., finances, accessibility, knowledge, experience), highlighting the need for more easily accessible, user-friendly sport psychology resources (Pope et al., 2015). Further, coaches indicated they had a high interest in information related to anxiety management, reflecting the high rates seen in the athletic

population (Mesagno et al., 2008; Rowland & Lankveld, 2019). These findings taken together lead to development of the SP4C website, after which, a pilot test was conducted to gain an understanding of coaches' interactions with the website (Farhat et al., 2022). The pilot test was guided by Graham and colleagues' (2006) Knowledge to Action framework, whereby it's suggested that knowledge dissemination tools be adapted to the intended audience and provided in a manner that fosters knowledge implementation, as informed by user habits and preferences (Farhat et al., 2022). The pilot test employed Google Analytics over a two-month period to objectively assess eight coaches' use of the resources provided on the SP4C website by measuring their total time spent on the website, number of sessions, average time spent per session, and number of page views (Farhat et al., 2022). Each coach accessed the website at least once throughout the study period, and the sample demonstrated an average usage time of 25.25 minutes (Farhat et al., 2022), suggesting the website had potential to be a viable resource for coaches. While these preliminary studies were focused solely on the coaching population, the website and resources are available to the public, meaning supporting agents in various roles can utilize the information how they see fit due to the generalizability of the resources.

The interest in anxiety-related information observed in the preliminary needs assessment coupled with the high rates of PPA in the athletic population led to the creation of the PPA content as part of an ongoing study. A PPA management section has since been added to the website, where supporting agents can access the five resources outlined in this paper, as well as additional summaries, infographics, worksheets, and activities, free of charge. These resources were developed by individuals within the field of kinesiology, all of whom possess a master's degree or higher, and one who actively works as a mental performance consultant. The aforementioned study for which the resources were curated will evaluate how they are perceived

by supporting agents, and any themes that emerge will result in the altering of resources to better cater to the intended audience.

Developing the resources

Symptoms and Interpretation of Pre-Performance Anxiety

In order to help athletes experiencing PPA, one must first understand what PPA is and how it presents. There are three categories of PPA symptoms; behavioral (i.e., pacing, withdrawal), cognitive (i.e., indecision, poor concentration), and physiological (i.e., muscle tension, vomiting) (Patel et al., 2010). Prior work has suggested that efforts to minimize negative anxiety outcomes should focus on altering interpretations of anxiety symptoms rather than symptom eradication (Thomas et al., 2007). To do this effectively, athletes must acknowledge their emotions and feelings, and orient to their facilitative (helpful) or debilitative (harmful) nature prior to addressing them (Neil et al., 2013). Therefore, recognizing the duality of PPA is important, as athletes can interpret their symptoms as either facilitative or debilitative, a distinction with the potential to impact an athlete's mindset and performance (Ong & Chua, 2021). Facilitative interpretations of PPA can help an athlete feel in the zone and more prepared to perform, while debilitative interpretations can lead to a lack of confidence and weaker performance. However, it can be challenging to recognize when a symptom is helpful or harmful. For example, feeling butterflies is both a symptom of PPA and a common element of the anticipation felt prior to a sporting event, but how the athlete interprets the feeling of butterflies can significantly influence their mindset and performance.

To address both the identification and interpretation of symptoms, the PPA Worksheet for Athletes was developed (see Figure 1). Supporting agents can distribute this worksheet to their athlete(s) to gain insight into how they experience PPA and determine where management

efforts should be focused. The worksheet asks athletes to reflect on the sport situation(s) during which they experience PPA, the symptoms they experience, whether they feel a symptom is helpful or harmful to their performance, and if they have any strategies for managing feelings of PPA. Finally, athletes are asked to reflect on how PPA impacts psychological factors such as their confidence, motivation, and stress level. Supporting agents should collect the completed worksheet (if the athlete is comfortable sharing their responses), to gain insight into how PPA is being experienced by their athlete(s).

When reviewing the responses, supporting agents should pay attention to the situations during which athletes report experiencing PPA, as well as how each reported symptom makes them feel. This will help guide the timing and direction of any management strategies the sport facilitator chooses to implement with the athlete and allow them to focus on providing management strategies for debilitative symptoms only. Further, it would be beneficial for the sport facilitator to have a conversation with the athlete to encourage self-reflection and determine how effective strategies were in practice. If an athlete reports that a strategy was not effective, the facilitator should continue to work towards finding a strategy that does help.

Self-Confidence Support

Self-confidence in sport is referred to as sport-confidence – one's belief that they possess the appropriate internal resources and capability to act effectively and succeed within their athletic environment (Vealey, 2009). PPA presents as a state-like anxiety response to stressful sporting situations, as it is often temporary and specific to certain events or actions (Ong & Chua, 2021). However, one's experience of PPA can vary depending on their level of sport-confidence, as it can help to protect athletes from the debilitative effects of PPA by influencing how they interact with and perceive their sporting environment (Ong & Chua, 2021). Low sport-

confidence can lead to increased feelings of performance anxiety and more debilitative interpretations of symptoms, as an athlete's perceived sense of control, decision-making ability, and self-regulatory responses can all be negatively impacted (Ong & Chua, 2021). However, high sport-confidence can minimize feelings of performance anxiety by helping athletes interpret situational factors in a more facilitative manner and feel an increased sense of control and ability to meet their goals (Ong & Chua, 2021; Vealey, 2009). Vealey (2009) suggested that developing controllable sources of confidence can foster a sense of ability and competence in athletes, highlighting the importance of developing alternative, controllable measures of success for athletes to focus on (e.g., mental preparation, support of others, skill mastery) in order to bolster their confidence, and allow them to demonstrate their abilities and feel accomplished because the criteria for success are more within their scope of control than external measures of success (i.e., winning) (Machida et al., 2012).

To help supporting agents foster sport-confidence in their athlete(s), a step-by-step Success in Sport Activity Planner (see Figure 2) was developed. This resource emphasizes the importance of identifying alternative ways athletes can succeed in sport - rather than just winning. The resource acts as a template, asking supporting agents to work with their athlete(s) to create a custom culture of success specific to their environment by asking their athlete(s) how they define success, sharing their own criteria for success, and then identifying several core elements of success that will be upheld throughout the session/season. Once supporting agents have developed these new core concepts, the resource walks them through creating a check-in plan to ensure athletes are being recognized for their successes and reflecting on how they did so. These check-ins are designed to offer positive feedback to athletes to help support sport-confidence. Often, small victories throughout a season go unnoticed, but utilizing the alternative

criteria for success and then recognizing those successes during check-ins can help an athlete feel more accomplished, in control, and confident, which in turn can help them manage feelings of PPA and perform to the level they are capable of. This resource acts as a template that facilitators can use to guide the process of redefining success by providing them with direction for how to include athletes in the process and reflect on the strategy after they have introduced it to help maximize impact and address any adjustments that need to be made.

Cognitive Restructuring

Due to the subjective nature of anxiety responses, athletes can benefit from learning to recognize whether an anxiety response is constructive or destructive to their mental state and overall performance (Ong & Chua, 2021). Guided by Cognitive Behavioural Theory, cognitive restructuring is often used as a cognitive anxiety management strategy, as it helps athletes recognize, challenge, and replace negative thought patterns with more adaptive thoughts and perceptions in order to maximize performance outcomes (Hanton et al., 2008; McArdle & Moore, 2012; Rowland et al., 2021). Cognitive restructuring strategies are based on the idea that cognitions (thoughts) are essential to explaining behaviour and performance outcomes (Hanton et al., 2008; McArdle & Moore, 2012). Maladaptive thoughts foster negative feelings and self-perceptions, which can create a disconnect between environmental demands and an athlete's resources, and impact overall performance (Neil et al., 2013). However, prior work has indicated replacing negative thoughts with more adaptive, positive thoughts can help athletes perceive a higher degree of control over their performance, allow for a more facilitative interpretation of anxiety, and produce more positive performance outcomes (Neil et al., 2013; Rowland et al., 2021). The reformative nature of cognitive restructuring can help athletes maintain a healthy

mindset, increase self-confidence, and contribute to improved performance outcomes (Hanton et al., 2008).

To provide an easy introduction to cognitive restructuring for both supporting agents and their athletes, the If-Then Worksheet (see Figure 3) was created. Designed to be distributed to athletes, the worksheet first provides a brief summary of cognitive restructuring and how it can aid in the management of PPA. Then, athletes are walked through the process of cognitive restructuring via the provided template. When experiencing PPA, athletes may begin to catastrophize – the amplifying of an issue or assuming the worst possible outcome will occur (Lukkahatai & Saligan, 2013). This worksheet is designed to help athletes acknowledge when they are catastrophizing and restructure their thoughts to reflect more realistic outcomes by using if-then statements. For example, *if I try a new skill in practice, then my teammates will laugh at me*, can become *if I try a new skill in practice, then I will show my teammates I am trying to add to my skillset*. The negative if-then statement is acknowledged and restructured to become a more facilitative if-then statement that can aid in PPA management.

Performance Routines

Anxiety can alter an athlete's focus by initiating a shift from automatic processing to deliberative processing, which in turn can contribute to feelings of PPA and negatively impact overall performance (Rowland et al., 2021). Performance routines consist of the systematic implementation of individualized task-relevant cognitive and behavioral strategies to manage anxiety, regulate arousal, and increase self-perceived control (Hanton et al., 2008; Rowland et al., 2021). There are two distinct types of performance routines; pre-event routines and pre-performance routines. Pre-event routines occur prior to sporting events (i.e., practice, game, training session), whereas pre-performance routines occur prior to the execution of a skill or task

within a sport (e.g., free throw, penalty shot) (Wakefield et al., 2017). Performance routines have been shown to enhance concentration and recall of physiological and psychological states, which can help athletes with anxiety management, automaticity of performance behaviours, attentional focus, and performance consistency (Cotterill, 2010; Mesagno et al., 2008). However, performance routines are most effective when they are individualized to an athlete's personality, available resources, and situational interpretations (Cotterill, 2010).

The Performance Cues for Athletes Worksheet (see Figure 4) was created for supporting agents to distribute to athletes to guide development of cue words as a routine prior to an action or event. The resource first offers a brief explanation of cues - words or short phrases an athlete can think or say aloud while preparing to perform (Hagan & Schack, 2019). Athletes are then guided through the process of developing a few cue words via the template provided. Supporting agents should emphasize that the word should be paired with an action (e.g., kick, throw) or event (e.g., team huddle) and practiced in order to create a routine the athlete can carry out with little attentional effort, as well as the importance of developing a cue word that is task-relevant. Cue words are designed to help athletes prepare both physically and mentally and remain present for the task at hand, whether it's a specific skill or a high-stakes game. Cue words can be incorporated into any sport and act as a brief performance routine used immediately prior to an action (e.g., movement, skill) or event (e.g., practice, game). Further resources for developing performance routines are available on the SP4C website.

Summary and Conclusion

Pre-performance anxiety is a prevalent experience within sport, one which athletes can learn to manage when provided with the appropriate skills and strategies. Providing supporting agents with the knowledge, information, and resources necessary to introduce these strategies to

their athletes can help to create a more knowledgeable and supportive environment within which athletes can maximize their potential. However, the resources presented within this paper are designed solely to address sport-related anxiety and are not intended for use with athletes who may be experiencing clinical anxiety. If an athlete's anxiety goes beyond the scope of sport, the best way for a supporting agent to help is by directing their athlete to alternative resources (i.e., those with appropriate training or qualifications). For example, the Canadian Centre for Mental Health and Sport (https://www.ccmhs-ccsms.ca/) and Canada Sport Helpline (1-888-837-7678) are platforms through which athletes can reach out to receive appropriate support from qualified individuals.

The aim of this paper was to outline how resources were developed and provide supporting agents with examples of the resources available to them. A synthesis of the literature yielded five modules of strategies, each containing multiple resources presented in various formats to supplement supporting agents' knowledge of PPA and provide tools to help them support athletes experiencing debilitative PPA. While the resources were initially developed for the coaching population, the user-friendly and generalized nature of the content lends itself to various supporting agents (e.g., coaches, consultants, parents, organizations) looking to address PPA in their athletes.

Data availability statement

The resources discussed throughout this paper are openly available in Figshare at https://doi.org/10.6084/m9.figshare.c.7163104.v5. Further, only one resource for each of the five modules is discussed within this paper, however, the remaining PPA information and resources are available via the Sport Psychology for Coaches website (sportpsychologyforcoaches.ca).

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Figure 1

Pre-Performance Anxiety Worksheet for Athletes

Pre-performance anxiety is an intensified mental and/or physical state that occurs before an athlete participates in a sports event (i.e., game, practice) or task within sport (i.e., penalty shot, free kick). It is common for an athlete to feel pre-game jitters or nerves, but sometimes those feelings can become too much to manage and begin to feel overwhelming. This worksheet asks you to reflect on your experiences with PPA. You will indicate which symptoms you experience, any strategies you may have for managing PPA, and how you feel your performance is impacted by PPA.

What sport situation(s) do you associate with pre-performance anxiety?

_____

_____

_____

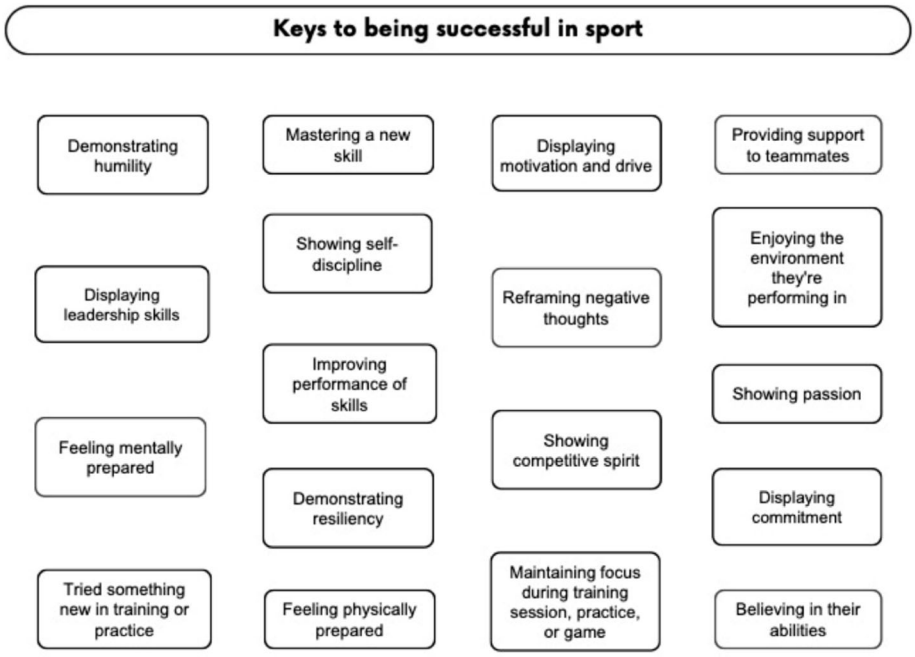
Section A: Some symptoms of pre-performance anxiety are listed below. Please check all the symptoms you feel apply to you on a typical day. Next to each symptom you check, please circle how you feel about the symptom; does it help you get ready to perform, or does it make you feel anxious to perform?

Symptom	✓	Ready to perform	Anxious to perform
Muscle Tension		Ready to perform	Anxious to perform
Negative Self-Talk		Ready to perform	Anxious to perform
Increased Heart Rate		Ready to perform	Anxious to perform
Increased Breathing Rate		Ready to perform	Anxious to perform
Indecision		Ready to perform	Anxious to perform
Poor concentration		Ready to perform	Anxious to perform
Twitching		Ready to perform	Anxious to perform
Defensiveness		Ready to perform	Anxious to perform
Pacing		Ready to perform	Anxious to perform
Butterflies		Ready to perform	Anxious to perform
Cold Sweat		Ready to perform	Anxious to perform
Forgetfulness		Ready to perform	Anxious to perform
Loss of Sleep		Ready to perform	Anxious to perform
Repetitive Movements		Ready to perform	Anxious to perform
Lack of Confidence		Ready to perform	Anxious to perform
Confusion		Ready to perform	Anxious to perform
Avoiding Eye Contact		Ready to perform	Anxious to perform
Aggression		Ready to perform	Anxious to perform
Vomiting		Ready to perform	Anxious to perform
Loss of appetite		Ready to perform	Anxious to perform
Feelings of weakness		Ready to perform	Anxious to perform
Frustration		Ready to perform	Anxious to perform
Clammy hands		Ready to perform	Anxious to perform
Fidgeting		Ready to perform	Anxious to perform

Figure 2

Success in Sport Activity Planner

Success in sport is often defined by winning outcomes, and while winning is certainly an important aspect of sport, there are many small victories between championships. Creating an environment in which success is defined by technique, improvement, and effort can help athletes maintain their sense of confidence, as these are things athletes have the ability to control. Below is the *Success in Sport Infographic for Athletes* which provides some of the alternative ways success in sport can be defined.



Allowing your athlete(s) to get involved in the definition of success you create helps you better understand what they think success looks like and ensures the culture you create is relevant and achievable for your athlete(s). To do this, take 15 minutes to meet with your athlete(s) (during a practice/training/team meeting) and discuss what success looks like for them. *We recommend not providing the infographic above to your athlete(s) until after they have come up with some ideas of their own – this provides space for them to really think about what success is to them and be creative in their ideas*. Have your athlete(s) shout out their ideas, write them on a whiteboard, or write them on a piece of paper that you can collect. Below is a space where you can write down some of the ideas they come up with:

_____

_____

_____

_____

Figure 3

If-Then Worksheet

When faced with anxiety-provoking situations or circumstances prior to performance, athletes may catastrophize. Catastrophizing is the amplifying of an issue or assuming the worst possible outcome will occur. For example, an individual may think "If I don't score a goal today, then I will be kicked off the team in no time" or "If I don't perform this floor routine perfectly, I will really disappoint my coach." Thoughts like this can lead to anxiety, but often these thoughts warrant no concern as the worst-case scenario an athlete thinks of is not usually the most likely outcome. Cognitive restructuring can help athletes recognize when they're catastrophizing and guide them in altering their patterns of thought to be more helpful. Below is an activity that can help athletes identify more realistic outcomes.

The goal of this activity is to turn a negative thought into a helpful thought that can challenge the athlete, help them grow, and reduce anxiety over the consequences of a situation. *If-then* statements are a good way to break down athletes' concerns so they can see their negative thinking patterns and alter them. You can find some examples of if-then statements provided in the table below.

Before		**After**	
If…	**…Then**	**If…**	**…Then**
If I don't score a goal today…	*…Then I will be kicked off the team in no time*	*If I don't score a goal today…*	*…Then I will work hard on my shooting accuracy next practice*
If I try a new skill in practice…	*…Then my teammates will laugh at me*	*If I try a new skill at practice…*	*…Then I will show my teammates I am trying to develop and I will be adding to my skillset*

Figure 4

Performance Cues for Athletes Worksheet

Cues are words or short phrases an athlete can think or say aloud while preparing to perform (Hagan & Schack, 2019). Cues can be used as a routine to help an athlete trigger the appropriate mindset or action, as they can help with attention focusing, distraction elimination, anxiety management, and mental and physical preparation. Cues are used to help an athlete attend to only the information relevant to the task at hand – sometimes referred to as *locking* in - which can lead to improved performance and increased confidence (Hagan & Schack, 2019)

Cues are thought or spoken immediately before an event (e.g., practice, game) or task performance (e.g., free throw, penalty shot, dive). They can be any task-relevant word or phrase the athlete chooses, most often they are instructional or motivational in. Below are some examples of cue words and phrases, and situations in which an athlete may use them. These can be helpful when guiding an athlete in the development of a cue. To be effective, cues must be paired with an action or event and practiced. If an athlete develops a cue word to help reduce anxiety before performing a free throw in a game, they should use the same cue word when practicing. Incorporating the cue in all situations is important as the more often it is used, the better the cue can help trigger the appropriate mindset and movement.

On the next page is a table that will guide you through cue development. There are some examples of cues words available to get you thinking. First, think of a situation in your sport during which you feel anxious, have trouble focusing, or start overthinking. Then think of a cue to tie to that situation (examples can be seen below). Once you've created a cue, explain how you believe it will help you in the sport situation you identified.

Situation	**Cue Word**	**How will it help?**
After warmups for a big game	*"I'm ready"*	This cue will remind me to clear my mind and focus on the game ahead
Entering the water on a dive	*"Smooth"*	This cue will remind me to keep my form as I enter the water
Preparing to take a free throw	*"Deep breath"*	This cue will help me center myself and remain loose before I take my shot

Figure 5

Self-Evaluation Worksheet

All sport facilitators have different ways of interacting with their athlete(s). Interactions can vary by athlete, situation, or mindset, however, it's important to remember that addressing athletes respectfully is essential to a healthy working relationship between a coach and their athlete(s). Follow the prompts below to reflect on how you currently work with your athlete(s) who may be experiencing pre-performance anxiety.

If you have an athlete experiencing pre-performance anxiety, what do you currently do to support them?

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How do you think sport facilitators should respond to a situation where an athlete is experiencing pre-performance anxiety?

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How can you ensure that you are addressing your athlete(s) respectfully when they are experiencing pre-performance anxiety? (You can list things you're mindful of, statements you use, etc.)

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_____

Chapter 3: Testing The Delivery Efficacy of a Knowledge Mobilization Tool Distributing Pre-Performance Anxiety Resources to Coaches

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Abstract

A gap exists between sport psychology research and its application in coaching, due to limitations of traditional dissemination methods and barriers like time and accessibility. Knowledge mobilization aims to bridge this gap, using foundations like the Knowledge to Action framework for structured knowledge transfer. The Sport Psychology for Coaches (SP4C) website was developed to address coaches' preference for informal learning, offering user-friendly, evidence-based resources. The current study further assessed efficacy of the SP4C website by offering a structured guide to help coaches navigate novel resources targeting pre-performance anxiety, evaluating the effectiveness of information delivery via the website and the impact of varying delivery methods. Coaches' knowledge of and attitudes towards PPA, coaching-specific autonomy and competence, and intentions to use the information were assessed. 37 coaches (M_{age} = 38.4, $M_{experience}$ = 13.4 years, 56.8% competitive level) participated in the mixed methods longitudinal randomized controlled trial. A series of one-way ANOVAs and ANCOVAs were performed, and codebook thematic analysis was used to assess data collected in follow-up interviews. Findings indicate provision of the PPA resources through the SP4C website improved coaches' knowledge, attitudes, autonomy, competence, and intentions. Additionally, when provided in conjunction with the guide, the positive impact on both knowledge and competence was further enhanced. Coaches confirmed in follow-up interviews that they learned from the resources and the guide enhanced their uptake and confidence. Overall, our findings suggest that the SP4C website is an effective KM tool when disseminating research findings to coaches, and that adding structured guidance can enhance knowledge retention and boost coaches' confidence in their ability to apply information in practice.

Introduction

There is a significant knowledge-to-action gap in the field of sport psychology, in which research is being conducted, but findings are not being integrated into coaching practice (Leggat et al., 2023; Williams & Kendall, 2007). This disconnect primarily stems from the limited dissemination of research findings, which are mainly shared through journal articles and conferences (Leggat et al., 2023; Pope et al., 2015). These formal dissemination methods present several barriers (e.g., time, cost, accessibility, varying levels of knowledge and experience) which hinder coaches' ability to access, understand, and apply the information effectively, exacerbating the knowledge-to-action gap observed in the field (Pope et al., 2015; Reade, Rodgers, & Hall, 2008; Reade, Rodgers, & Spriggs, 2008).

Knowledge mobilization (KM) is defined as the "flow and uptake of research knowledge between researchers, knowledge brokers, and knowledge users" (SSHRC, 2021). The Knowledge to Action (KTA) framework was developed to outline the structure of effective KM and the essential elements for consideration when disseminating research. The KTA framework consists of two main components: knowledge creation and the action cycle. Knowledge creation encompasses information development and synthesis, which occurs in three phases; first-generation (derived from findings of primary studies), second-generation knowledge (synthesized information from first-generation knowledge), and third-generation knowledge (tools designed to distribute information in user-friendly ways) (Graham et al., 2006; Holt et al., 2018). The second component of the KTA framework is the action cycle. Comprised of several phases, the action cycle provides guidance for the optimization of information dissemination (Graham et al., 2006; Holt et al., 2018). This cycle consists of the six phases: (i) identify problems that need addressing, (ii) identify, review, and select research relevant to the problems

(iii) adapt and tailor information to the relevant audience, (iv) monitor knowledge use, (v) evaluate knowledge use and outcomes, and (vi) support the continued use of knowledge (Graham et al., 2006; Holt et al., 2018).

In 2015, a needs assessment was conducted to address phases one and two. This work determined that coaches who faced more barriers (often those with less experience, less certification, and operating a lower levels of competition) struggled to access sport psychology resources, while those who faced fewer barriers (often those with more experience, more certification, and operating at higher levels of competition) reported greater use of sport psychology resources (Pope et al., 2015). This highlighted the gap in research dissemination, as formal methods (i.e., academic journals, conferences) were not reaching all coaches effectively. Given that coaches prefer informal, self-directed modes of learning, it was suggested that an online sport psychology resource may better cater to coaches, mitigating barriers like time, accessibility, and finances (Nelson et al., 2006; Pope et al., 2015). Coaches supported this suggestion, indicating they would utilize an online sport psychology resource so long as it was accessible, user-friendly, and evidence-informed (Pope et al., 2015). The assessment concluded development of an online resource for coaches would be beneficial if it addressed these barriers.

The Sport Psychology for Coaches (SP4C) website was then developed as a KM tool to provide coaches with evidence-informed, easily digestible sport psychology information in various formats (summaries, infographics, worksheets, and activities) that coaches can use and adapt to provide support to their athlete(s). These resources target a variety of topics, such as goal setting, imagery, and concentration, to help athletes maximize their performance. A pilot test of the website was conducted to address phases three and four of the action cycle. Coaches in the pilot test found the website highly beneficial and the information relevant. However, with

only eight varsity coaches participating, all from the same institution, the findings – while positive – cannot be generalized beyond this specific group. Further, several areas of improvement were noted that would potentially enhance implementation outcomes and continued use of the resources. Coaches reported the lack of guidance regarding where to start, how to navigate through the resources, and how to implement strategies into practice as factors contributing to diminished confidence and lack of utilization (Farhat et al., 2022), thereby impacting the effectiveness of the website as a KM tool. As a result, guidance and direction were identified as core themes of coaches' recommendations for website enhancement, supporting the idea that informal, self-directed learning resources may be enhanced by the presence of structure (Farhat et al., 2022; Ryan & Deci, 2020).

The current study aimed to build on this prior work by further assessing the efficacy of the SP4C website with a more diverse sample of coaches and addressing coaches concerns about the lack of guidance provided. To do this, novel resources targeting pre-performance anxiety (PPA) were provided to coaches through two varying delivery methods and five outcome variables were assessed. Coaches' knowledge, attitudes, coaching-related autonomy and competence, and intentions to implement the information were assessed to evaluate the efficacy of the website as a KM tool and the impact of varying delivery methods. These measures offered an understanding of how the resources and their delivery impacted coaches at an individual level, providing insight into how best to support to coaches with the aim of fostering continued use of sport psychology information by further curating resources and delivery methods to coaches' preferences and needs, while concurrently assessing the outcomes of doing so.

Purpose

The purpose of this study was to gain a comprehensive understanding of the efficacy of a KM tool (the SP4C website) delivering PPA information to coaches, and to determine whether delivery modality impacted the efficacy. To address this, four research questions were developed: (1) Do the provided PPA resources affect coaches' knowledge of and attitudes toward PPA and does delivery method influence the effect? (2) Do the provided PPA resources affect coaches' autonomy and competence and does delivery method influence the effect? (3) Do the provided PPA resources affect coaches' intentions to use and interact with the provided PPA resources and does the delivery method influence the effect? (4) How do the provided PPA resources and their delivery method influence coaches' knowledge of and attitude toward PPA, and autonomy and competence within their practice?

We hypothesized that (a) provision of the resources will result in an increase in coaches' knowledge of PPA, and greater knowledge uptake will be observed in the structured delivery groups, (b) provision of the resources will result in coaches displaying more positive and empathetic attitudes towards PPA, and there will be no differences observed in coaches' attitudes as a function of the delivery method, (c) provision of the resources will result in a decrease in coaches' sense of autonomy, and greater autonomy-thwarting will be observed in the structured delivery groups, (d) provision of the resources will result in an increase in coaches' sense of competence, and greater competence fulfillment will be observed in the structured delivery groups, (e) provision of the resources will result in an increase in coaches' intentions to utilize the information, and greater intentions will be observed in the structured delivery groups.

Methodology

Philosophical Assumptions

The study adopted a critical realist perspective, which blends ontological realism with epistemological subjectivism, postulating that while the truth is "real" and tangible, reality is multifaceted and exists through human perception (Ryba et al., 2022). The mixed methods approach employed in the current study aligns with critical realism by using multiple data sources to uncover underlying patterns and provide a deeper analysis of coaches' experiences with the website and PPA resources (Stanford et al., 2022; Ryba et al., 2022).

Participants

After receiving ethical approval from the University of Alberta Research and Ethics Office (Pro00132563), participants were recruited through sport organizations, public posters (Appendix A), and online resources using snowball sampling (Appendix B). Eligibility criteria included: (a) fluency in English, (b) aged 18 years or older, (c) internet access, (d) active coaching role for at least 60 days post-enrollment, (e) at least two coaching sessions per 30 days during the study, and (f) no prior interaction with the SP4C website.

A total of 37[2] coaches aged 20 to 65 years (M_{age} = 38.35, SD = 12.20) with 1 to 40 years of experience (M = 13.35, SD = 9.73). Most were from Alberta (64.9%), with others from various Canadian provinces (8.1% British Columbia, 8.1% Ontario, 5.4% Quebec, 10.8% other) and 2.7% from the USA. Participants had diverse education levels: 37.9% had a bachelor's degree, 29.7% a post-graduate degree, 16.2% some post-secondary education, 13.5% a college diploma, and 2.7% had graduated high school. Most (83.8%) had a recognized coaching

[2] An a priori power analysis was conducted using G*Power version 3.1.9.7, indicating a sample size of 136 would be required to detect an effect size of .25 at 80% power (Faul et al., 2007). However, only 37 coaches participated in the study, therefore our findings have reduced statistical power and will be treated as exploratory in nature.

certification (e.g., NCCP), while 16.2% did not. Coaches averaged 14.22 hours per week coaching (*SD* = 11.72). About 32.4% had used online sport psychology resources, 18.9% actively, and 54.1% had previously used PPA resources. Participants coached a variety of sports (20.9% athletics, 18.6% volleyball, 11.6% hockey, 11.6% soccer, 9.3% basketball, 4.7% rugby, 23.3% other) and levels (56.8% competitive, 18.9% provincial/national/international, 16.2% other, 5.4% college/university, 2.7% recreational), with athletes ranging from 4 to 60 years old.

Intervention

Resources A narrative review of the literature was conducted to explore various approaches to managing sport-related anxiety, focusing on information appropriate for coaches, while excluding strategies for managing clinical anxiety (Stevens et al., in review). Five categories were established to guide resource development: Symptoms and Interpretation of PPA (five resources), Self-Confidence Support (six resources), Cognitive Restructuring (five resources), Performance Routines (six resources), and Support and Reflection (three resources) (Stevens et al., in review). A recurring theme in the literature was athletes' interpretation of anxiety symptoms, highlighting the need to understand their individual impact (Neil et al., 2013; Thomas et al., 2007; Ong & Chua, 2021). Further, the importance of shifting athletes' negative perceptions of anxiety, the effectiveness of performance routines in managing PPA, and the protective role of sport confidence against PPA were all highlighted (Hanton et al., 2008; Machida et al., 2012; Mesagno et al., 2008; Neil et al., 2013; Ong & Chua, 2021; Rowland et al., 2021; Vealey, 2009). Additionally, the adaptability of coaches was deemed crucial for enhancing their ability to support athletes (Cropley et al., 2023; Gilbert & Trudel, 2001). For each module, multiple resources were developed (e.g., summaries, infographics, activities, worksheets) with supplementary information framing the nature and pertinence of each resource to create an

informative experience. Provision of these resources via the SP4C website constituted our intervention, whereby participants were asked to interact with the resources as they saw fit for their respective 30-day intervention periods.

Guide A detailed ten-page step-by-step guide was developed and provided to coaches to facilitate their navigation of the available resources. This comprehensive guide is tailored to support coaches by offering clear directions on where to begin, how to effectively progress through the information, and the optimal timing for implementing various interventions. Additionally, the guide outlines specific interventions suited to different scenarios, enabling coaches to make informed decisions based on the unique needs of their athletes. By integrating practical strategies and examples, the guide aimed to enhance coaches' understanding and application of the resources, ultimately fostering a more supportive environment for athletes. Provision of this guide constituted the structured delivery method, while absence of the guide constituted the unstructured delivery method.

Measures

Data were collected using both quantitative and qualitative methods. Quantitative assessments included adapted versions of the Rosenbaum Concussion Knowledge and Attitudes Survey – Coach Form (RoCKAS-CH; Rosenbaum, 2007), Basic Psychological Need Satisfaction and Frustration Scale (BPNSFS; Chen et al., 2015), and Measure of Innovation-Specific Implementation Intentions (MISII; Moullin et al., 2018), all administered via Qualtrics (2024). Qualitative data were gathered through semi-structured interviews conducted via Zoom (2024).

Rosenbaum Concussion Knowledge and Attitudes Survey – Coach Form. An adapted version of the RoCKAS-CH (see Appendix J; Rosenbaum, 2007) was completed in each survey to obtain data regarding coaches' knowledge of and attitudes towards PPA. Knowledge was

assessed to gain an understanding of information uptake and retainment. Attitudes were assessed due to the role they play in learning and openness to information (Barker & Winter, 2014). The assessment, comprising 40 items, was divided into five sections. Sections 1 and 2 used true/false questions (1 = correct, 0 = incorrect), while Section 5 involved a checklist of eight PPA symptoms and eight distractor symptoms (1 = correctly identified, 0 = incorrect). Sections 1, 2, and 5 had a combined maximum score of 30, with higher scores denoting greater knowledge. Sections 3 and 4 used Likert-style questions (1 = strongly disagree to 5 = strongly agree) with a combined maximum score of 90, with higher scores denoting more positive attitudes.

Basic Psychological Need Satisfaction and Frustration Scale. An adapted version of the BPNSFS (see Appendix K; Chen et al., 2015) was completed in each survey to obtain data regarding coaches' sense of autonomy and competence within the context of their coaching practice. Autonomy was assessed due to the role it plays in learning, and to assess whether the guide impacted coaches' sense of control and decision-making ability in regard to the information they introduced to their practice (Ryan & Deci, 2020). Competence was assessed due to the role it plays in learning, and to understand coaches' confidence in their ability to apply the information and effectively administer interventions (Ryan & Deci, 2020). Only scale items pertaining to autonomy and competence were adapted and utilized. The scale included 16 Likert-style questions (1 = completely untrue, 5 = completely true), with eight questions for each construct. The maximum score for both autonomy and competence was 40, with higher scores indicating greater fulfillment of each need.

Measure of Innovation-Specific Implementation Intensions. An adapted version of the MISII (see Appendix L; Moullin et al., 2018) was completed in each survey to obtain data regarding participants' intentions to utilize the resources. This assessment was conducted

because intentions are a determinant of implementation behavior (Moullin et al., 2018). This assessment tool was deemed appropriate for use within the current study due to its prior use in evaluating practitioners' intentions to implement evidence-based practices. The adapted scale consisted of three statements rater on a Likert-style scale from 0 (not at all) to 4 (to a very great extent), with a total possible score of 12, with higher scores denoting stronger intentions.

Google Analytics. Google Analytics (2024) objectively measured participants' interactions with the PPA resources and adherence to the guide (if applicable). Data collected included total time on the website, average number and duration of sessions, and resource viewing order. This approach followed the pilot test methods (Farhat et al., 2022) and established web analytics guidelines (Farney, 2018). Further, a resource order percentage score was calculated to objectively assess adherence to the guide. This score was calculated by assigning one point to each linear step through the resources and dividing the total number of points assessed by the total number of resources visited to create a percentage score.

Semi-Structured Interviews. Aligning with critical realism, an explanatory-sequential mixed methods design was used to explore coaches' experiences with the website and PPA resources. Semi-structured interviews, guided by coaches' group assignments, survey responses, and Google Analytics data, were conducted. The interview guide included standardized questions (e.g., "How has your confidence in working with athletes managing PPA changed?") and group-specific questions (e.g., "How did the guide impact your use of the information?").

Procedure

This study was preregistered through Open Science Framework (https://osf.io/7zaf6). An explanatory sequential mixed methods longitudinal randomized controlled trial design was employed to provide a comprehensive interpretation of the findings (Creswell & Creswell,

2018). All participants provided consent prior to beginning the study (see Appendix C) and completed three surveys within the 60-day study period. Survey one (see Appendix D) consisted of inclusion criteria questions and the coach assessment. The coach assessment included measures of coaches' PPA knowledge and attitudes (Rosenbaum, 2007), coaching-specific autonomy and competence (Chen et al., 2015), and intentions to implement the information (Moullin et al., 2018). Following completion of survey one, participants were randomly assigned to one of four group conditions: (i) experimental-unstructured (E-US), (ii) experimental-structured (E-S), (iii) control-unstructured (C-US), or (iv) control-structured (C-S). Participants in the experimental groups initiated the 30-day intervention period at commencement of the study (at which time Google Analytics was activated). The intervention consisted of full access to the PPA management resources provided on the SP4C website (see Appendix E), and participants were instructed to interact with the resources as they saw fit for the duration of the intervention period. Those in the E-S group were provided with a structured guide for how to navigate the provided resources (see Appendix F), while those in the E-US group were not. Participants in the control groups entered the 30-day waitlist period following completion of survey one. Following the first phase (day 1-30) of the study, all participants were asked to complete survey two (see Appendix G/H) which consisted of the coach assessment and a follow-up interview inquiry for the experimental groups. Following completion of the second survey, participants in the experimental groups entered the 30-day waitlist period (at which time Google Analytics was ceased), while participants in the control groups entered the 30-day intervention period (at which time Google analytics was activated). Following phase two (day 31-60) of the study, Google Analytics ceased for the control groups and all participants were asked to complete survey three (see Appendix G/H), which consisted of the coach assessment and a

follow-up interview inquiry for the control groups. One-to-one semi-structured interviews were conducted virtually with all participants who, following their intervention period, indicated an interest in participating in a follow-up interview. All interviews were conducted within a week of the conclusion of a participants' time in the intervention period (i.e., after phase one for experimental groups, after phase two for control groups). Following completion of all study elements, participants were debriefed (see Appendix I). Participants' path through the study can be seen in Figure 6.

Data Analyses

Preliminary Analyses

All quantitative data analyses were conducted using SPSS 25 software (IBM, 2024). A missing values analysis was conducted and revealed no missing data. Unadjusted means and variability were calculated at the group level. Outliers in one participant's data, identified via reverse coding and boxplot inspection, were removed due to inconsistencies. Data for all variables were normally distributed, with skewness and kurtosis within ±3.29 (Field, 2009). The assumption of homogeneity of regression slopes was met.

Main Analyses

A series of one-way analysis of variance (ANOVA) were conducted to assess the differences between groups for each independent variable (knowledge, attitudes, autonomy, competence, intentions) at baseline. Further, a series of repeated measures ANOVAs with a Greenhouse-Geisser correction were conducted to assess the differences within each group across the study for each dependent variable. A series of one-way analysis of covariance (ANCOVA) were then conducted to analyse the differences between groups across the duration of the study (i.e., at survey two and survey three), while accounting for baseline (i.e., survey one)

scores on each assessment. Bonferroni post hoc analyses were completed where significant differences were found. To assess the practical significance of findings, effect sizes and 95% confidence intervals (CIs) were used. The statistical assumptions associated with ANOVA and ANCOVA were addressed for each analysis and broadly met. Due to the small sample size however, results should be interpreted with caution. The means and adjusted means for each dependent variable can be seen in Table 2.

Semi-Structured Interview Analysis

Nine coaches participated in voluntary follow-up interviews, conducted and recorded via Zoom (2024) and averaging 53.36 minutes in duration (*SD* = 12.32). Interview recordings were transcribed verbatim and member checking (i.e., transcript sent to participant for approval or retraction) was conducted following the interview (Burke, 2017). All participants were assigned a pseudonym to ensure anonymity. A codebook thematic analysis (TA) was conducted to identify trends across the data and generate themes identifying shared experiences, aligning with critical realism as it postulates a more comprehensive understanding can be garnered through codebook development and refinement (Braun et al., 2017). A within-case approach to codebook TA was first used to identify themes and generate codes, followed by a cross-case synthesis whereby themes were analyzed across the sample to identify over-arching themes. Themes were identified using a deductive-inductive approach to codebook TA (Proudfoot, 2023). To ensure credibility and reduce researcher bias, a secondary coder reviewed the interpretations.

Quantitative Results

Knowledge

ANOVAs. A significant difference in knowledge was observed in the E-US group, $F(1.32, 11.87) = 81.99$, $p < .001$, $\eta^2 = .90$. Post hoc analyses showed that knowledge

significantly increased from survey one to survey (p <.001). No significant difference was observed between survey two and survey three (p = .532). A significant difference was also observed in the E-S group, $F(1.19, 9.50) = 68.49$, $p < .001$, $\eta^2 = .90$. Post hoc analyses showed that knowledge significantly increased from survey one to survey two (p <.001). No significant difference was observed between survey two and survey three (p = .675). A significant difference in knowledge was observed in the C-US group, $F(1.26, 10.06) = 45.70$, $p < .001$, $\eta^2 = .85$. Post hoc analyses showed no significant difference between survey one and survey two, (p = 1.00), however, knowledge significantly increased from survey two to survey three (p <.001). A significant difference in knowledge was observed in the C-S group, $F(1.05, 8.42) = 102.68$, $p < .001$, $\eta^2 = .93$. Post hoc analyses showed no significant difference between survey one and survey two (p = 1.00), however, knowledge significantly increased from survey to survey three (p <.001).

ANCOVAs. No significant difference in knowledge was observed between groups at baseline, $F(3, 33) = .09$, $p = .964$, $\eta^2 = .01$. After adjusting for baseline scores on the knowledge assessment, a statistically significant difference was observed in knowledge between the groups following phase one, $F(3, 32) = 69.94$, $p < .001$, $\eta^2 = .67$. Post hoc analyses demonstrated that the experimental groups reported higher knowledge scores in comparison to control groups following their intervention phase. The E-S group displayed greater knowledge than the C-S group with a mean difference of 7.59, 95% CI [5.67, 9.51], $p < .001$, the C-US group with a mean difference of 8.16, 95% CI [6.25, 10.08], $p < .001$, and the E-US group with a mean difference of 2.27, 95% CI [0.41, 4.14], $p = .010$. Similarly, the E-US group displayed greater knowledge than the C-US group with a mean difference of 5.89, 95% CI [4.03, 7.75], $p < .001$ and the C-S group with a mean difference of 5.32, 95% CI [3.45, 7.18], $p < .001$. Following

completion of phase two, whereby the control groups had received the intervention, the structured delivery groups (i.e., E-S, C-S) reported the highest knowledge scores and a statistically significant difference between groups was observed at survey three, $F(3, 32) = 13.12$, $p < .001$, $\eta^2 = .55$. Post hoc analyses revealed the C-S group displayed greater knowledge than the C-US group with a mean difference of 3.54, 95% CI [1.69, 5.39], $p < .001$, and E-US group with a mean difference of 2.67, 95% CI [0.87, 4.48], $p = .001$. The E-S group also reported greater knowledge than the E-US group with a mean difference of 2.06, 95% CI [0.22, 3.90], $p = .021$ and C-US group with a mean difference of 2.84, 95% CI [0.88, 4.81], $p = .002$. See Figure 7a for a visual representation of group knowledge scores.

Attitudes

ANOVAs. A significant difference in attitudes was observed in the E-US group, $F(1.21, 10.91) = 55.47$, $p < .001$, $\eta^2 = .86$. Post hoc analyses showed that attitude scores significantly increased from survey one to survey two ($p < .001$). No significant difference was observed between survey two and survey three ($p = 1.00$). A significant difference in attitudes was observed in the E-S group, $F(1.23, 9.84) = 47.46$, $p < .001$, $\eta^2 = .86$. Post hoc analyses showed that attitude scores significantly increased from survey one to survey two ($p < .001$). No significant difference was observed between survey two and survey three ($p = .675$). A significant difference in attitudes was observed in the C-US group, $F(1.26, 10.07) = 49.79$, $p < .001$, $\eta^2 = .86$. Post hoc analyses showed no significant difference between survey one and survey two ($p = 1.00$), however, attitude scores significantly increased from survey two to survey three ($p < .001$). A significant difference in attitudes was observed in the C-S group, $F(1.19, 9.51) = 97.13$, $p < .001$, $\eta^2 = .92$. Post hoc analyses showed no significant difference between survey one

and survey two (p = 1.00), however, attitude scores significantly increased from survey two to survey three (p <.001).

ANCOVAs. No significant difference in attitudes was observed between groups at baseline, $F(3, 33) = .25$, $p = .859$, $\eta^2 = .02$. After adjusting for baseline scores on the attitudes assessment, a statistically significant difference observed in attitudes between the groups following phase one, $F(3, 32) = 54.96$, $p < .001$, $\eta^2 = .837$. Post hoc analyses demonstrated that the experimental groups reported more positive attitude scores in comparison to the control groups. The E-US group displayed more positive attitudes than the C-US group with a mean difference of 7.17, 95% CI [5.22, 9.11], $p < .001$, and C-S group with a mean difference of 6.51, 95% CI [4.58, 8.44], $p < .001$. Similarly, the E-S group reported more positive attitudes than the C-US group with a mean difference of 5.91, 95% CI [3.94, 7.88], $p < .001$, and C-S group with a mean difference of 5.25, 95% CI [3.28, 7.23], $p < .001$. Following completion of phase two, whereby the control groups had received the intervention, a statistically significant difference between groups was observed, $F(3, 32) = 3.45$, $p = .028$, $\eta^2 = .24$. Post hoc analyses revealed the C-S group reported more positive attitudes than the C-US group with a mean difference of 2.37, 95% CI [0.17, 4.58], $p = .029$. A visual representation of group attitude scores can be seen in Figure 7b.

Autonomy

ANOVAs. A significant difference in autonomy was observed in the E-US group, $F(1.91, 17.15) = 4.99$, $p = .021$, $\eta^2 = .36$. No significant difference was observed between survey one and survey two (p = .066), or survey two and survey three (p = 1.00). However, a significant difference was observed between survey one and survey three (p = .043). A significant difference in autonomy was observed in the E-S group, $F(1.45, 11.59) = 12.27$, $p = .002$, $\eta^2 = .61$. Post hoc

analyses showed that autonomy significantly increased from survey one to survey two (p = .011). No significant difference was observed between survey two and survey three (p = 1.00). A significant difference in autonomy was observed in the C-US group, $F(1.40, 11.21) = 13.30$, p = .002, η^2 = .62. Post hoc analyses showed no significant difference between survey one and survey two, (p = 1.00), however, autonomy significantly increased from survey two to survey three (p = .009). A significant difference in autonomy was observed in the C-S group, $F(1.24, 9.93) = 88.50$, p = .012, η^2 = .52. Post hoc analyses showed no significant difference between survey one and survey two (p = 1.00), or survey two and survey three (p = .073). However, autonomy significantly increased from survey one to survey three (p = .017).

ANCOVAs. No significant difference in autonomy was observed between groups at baseline, $F(3, 33) = .88$, p = .460, η^2 = .07. After adjusting for baseline scores on the autonomy assessment, a statistically significant difference was observed in autonomy between groups following phase one, $F(3, 32) = 7.61$, $p < .001$, η^2 = .42. Post hoc analyses demonstrated that the experimental groups reported higher autonomy scores than the control groups. The E-S group reported greater autonomy than the C-US group with a mean difference of 5.77, 95% CI [1.60, 9.43], p = .003, and C-S group with a mean difference of 5.00, 95% CI [0.96, 9.04], p = .009. Further, the E-US group reported greater autonomy than the C-US group with a mean difference of 4.55, 95% CI [0.59, 8.51], p = .017. No statistically significant differences were observed between the groups following completion of phase two, $F(3, 32) = 2.46$, p = .081, η^2 = .19. A visual representation of group autonomy scores can be seen in Figure 7c.

Competence

ANOVAs. A significant difference in competence was observed in the E-US group, $F(1.74, 15.64) = 16.05$, $p < .001$, η^2 = .64. Post hoc analyses showed that competence

significantly increased from survey one to survey two (p = .024). No significant difference was observed between survey two and survey three (p = .368). A significant difference in competence was observed in the E-S group, $F(1.12, 8.93) = 10.39$, p = .009, η^2 = .57. Post hoc analyses showed that competence significantly increased from survey one to survey two (p = .025). No significant difference was observed between survey two and survey three (p = .471). A significant difference in competence was observed in the C-US group, $F(1.25, 10.12) = 78.26$, p < .001, η^2 = .91. Post hoc analyses showed no significant difference between survey one and survey two (p = 1.00), however, competence significantly increased from survey two to survey three (p <.001). A significant difference in competence was observed in the C-S group, $F(1.85, 14.83) = 24.81$, p < .001, η^2 = .76. Post hoc analyses showed no significant difference between survey one and survey two (p = .727). However, competence significantly increased from survey two to survey three (p = .001).

ANCOVAs. No significant difference in competence was observed between groups at baseline, $F(3, 33) = .35$, p = .791, η^2 = .03. After adjusting for baseline scores on the competence assessment, there was a statistically significant difference observed in competence fulfillment between groups following phase one, $F(3, 32) = 21.96$, p < .001, η^2 = .67. Post hoc analyses demonstrated the experimental groups reported higher competence scores compared to the control groups. The E-S group reported greater competence than the E-US group with a mean difference of 4.33, 95% CI [.75, 7.92], p = .011, C-US group with a mean difference of 9.22, 95% CI [5.38, 13.06], p < .001, and C-S group with a mean difference of 8.65, 95% CI [5.13, 12.17], p < .001. Further, the E-US group reported greater competence than the C-S group with a mean difference of 4.32, 95% CI [.91, 7.73], p = .007, and C-US group with a mean difference of 4.89, 95% CI [1.50, 8.29], p = .002. A statistically significant difference between groups was

also observed following completion of phase two, $F(3, 32) = 18.83$, $p < .001$, $\eta^2 = .64$. Post hoc analyses demonstrated the structured groups (i.e., E-S, C-S) reported the highest competence scores. The E-S group reported greater competence than the E-US group with a mean difference of 2.44, 95% CI [.42, 4.46], $p = .011$, and C-US group with a mean difference of 4.61, 95% CI [2.45, 6.77], $p < .001$. Further the C-S group reported greater competence than the E-US with a mean difference of 2.81, 95% CI [.89, 4.74], $p = .002$, and C-US group with a mean difference of 4.99, 95% CI [2.96, 7.01], $p < .001$. See Figure 7d for a visual representation of group competence scores.

Intentions

ANOVAs. No significant difference in intentions was observed in the E-US group, $p = .191$. However, a significant difference was observed in the E-S group, $F(1.29, 10.34) = 4.59$, $p = .050$, $\eta^2 = .37$. Post hoc analyses showed that intentions significantly increased from survey one to survey two ($p = .006$). No significant difference was observed between survey two and survey three ($p = 1.00$). No significant difference in intentions was observed in the C-US group, ($p = .65$). A significant difference in intentions was observed in the C-S group, $F(1.78, 14.21) = 5.43$, $p = .020$, $\eta^2 = .40$. Post hoc analyses showed no significant differences between survey one and two ($p = 1.00$), or survey two and three ($p = .145$). However, a significant difference was observed between survey one and survey three ($p = .030$).

ANCOVAs. No significant difference in intentions was observed between groups at baseline, $F(3, 33) = 2.38$, $p = .087$, $\eta^2 = .18$. After adjusting for baseline scores on the intention assessment, there was a statistically significant difference in intentions between groups following phase one, $F(3, 32) = 4.10$, $p = .014$, $\eta^2 = .28$. Post hoc analyses found the E-S group reported greater intentions than C-US group with a mean difference of 2.47, 95% CI [0.34, 4.60], $p =$

.016. A statistically significant difference between groups was also observed following completion of phase two, $F(3, 32) = 4.52$, $p = .009$, $\eta^2 = .30$. Post hoc analyses revealed the E-S group reported greater intentions than the E-US group with a mean difference of 2.37, 95% CI [0.00, 4.74], $p = .050$. The C-S group also reported greater intentions than the E-US group with a mean difference of 2.80, 95% CI [0.48, 5.12], $p = .011$. A visual representation of group intention scores can be seen in Figure 7e.

Qualitative Results

Cross-case Synthesis. A cross-case synthesis was conducted to produce themes representing shared experiences, and two higher-order themes emerged (i.e., resource impact, delivery method impact) which highlighted factors that influenced usage and retainment outcomes of coaches' interactions with the website.

Resource Impact. There were five specific factors (i.e., knowledge acquisition, knowledge in action, competence fulfillment, autonomy-support, altered attitudes) discussed by coaches as having been impacted by the PPA management resources provided via the SP4C website.

Knowledge Acquisition. Many coaches discussed how their knowledge of PPA increased as a result of interacting with the resources. Knowledge acquisition consisted of gaining knowledge about PPA, the impact of PPA on athletes, and the available PPA management strategies. Several coaches discussed the process of learning throughout their time in the study and concluded they felt more knowledgeable about PPA. As Oscar said, "I definitely know more now than I did, and more like applicable stuff as opposed to general information I was trying to spin off as my knowledge."

Further, participants felt their knowledge of the role they could play in PPA management changed as they learned about interventions they could apply themselves. Some coaches had expressed they did not know how to support their athletes, but felt they now possessed the knowledge to do so within the capacity of their coaching role. Bob highlighted this:

> Everything helps, and now I know there's more pointed things we can use to help certain problems and now we have the know-how to use them. Looking back now, I realize that, maybe we could have targeted certain issues more specifically, but also, like I'm just a coach, not like, a performance consultant, you know. But now, now I know enough and I understand that yeah, maybe I'm, as a coach, I'm part of that first layer of support.

Knowledge in Action. Several coaches discussed how they had applied the information gained from the PPA resources in their coaching practice, putting their newfound knowledge into action. Further, coaches expressed that following implementation of the PPA management strategies with their athletes, they could see results wherein an athlete who was once negatively impacted by PPA showed improvement in their management and overall performance. For example, Oscar described how after implementing a strategy from the website, he observed a change in two of his volleyball players:

> There was a couple of guys who would start overthinking and it wouldn't be as automatic, and they were the ones who I think really, really benefitted from that one [performance cues for athletes worksheet] cause their word gave them something to focus on that wasn't the mechanics of their hit and like, helped them clear their head and focus a bit more without, without overfocusing I guess.

Other coaches highlighted how certain resources helped them put their knowledge into action and develop a plan for implementing management strategies, as Sidney explained:

> That one [resource activity] was really good, cause like I'd never pinned this kid as an anxious player, but the info got me questioning that. So I had him do that sheet and then we talked through it together, and like yeah he was feeling anxious, but he had more going on, like symptoms wise than what I'd even noticed, so then we talked through that kind of stuff and came up with, like, almost like a plan of action of sorts that we worked together on.

Competence Fulfillment. Another topic discussed throughout the interviews was coaches' sense of ability to utilize the information and resources provided by the website. Competence fulfillment consisted of coaches expressing a greater sense of self-efficacy when applying information and strategies within their coaching practice. Many coaches explained that they felt comfortable using the information in practice because of the resources made available to them. Matthew explained this:

> We were uneducated, but passionate, and the website, it like, it helped guide us through helping this guy even better than we did before. And I feel like he trusted us a bit more cause we were coming in with, like, real resources, rather than like, 'Coach Matthew told me I should think less bad stuff.' So we felt more confident in what we were doing, and I think, like, well I hope, he felt more confident in us.

Other coaches claimed the easily digestible, adaptable information helped them feel capable of utilizing the resources and confident they could do so effectively. Simone explained:

> I think I'm more prepared now to take on that extra part of being a coach when you help them not only with the physical stuff, but also the mental stuff. Before I maybe, I wasn't as confident in the mental stuff as the physical stuff. Now though, I think now I'm more confident I can try to help in that department.

Autonomy-Support. Coaches expressed their appreciation for the informal, move-at-your-own-pace formatting offered by the website, suggesting that their own knowledge of their coaching practice allowed them to tailor their approach to the information and select what felt most appropriate to their situation. The ability to choose how they moved through the information helped coaches feel as though they were selecting information and resources that supplemented their coaching practice, while still complying to their style and needs. Sidney discussed how this helped her tailor interventions to her players' needs:

> I actually went about it on an individual basis. I felt like I had a good idea of who would be into it [use of PPA management strategies] and who wouldn't and then kind of went from there. And then I think that has the added benefit of like, individualizing it for everyone. I mean, all the stuff you had on there offered a couple different, um, different ways to use them, or like there was something for me and something to use with an athlete too, so I could adjust how I used it.

Several coaches emphasized their appreciation for how the website offered a variety of resources for coaches to choose from and adapt if needed. Coaches indicated they know their athletes best, so being able to decide what to use and how was appreciated, as explained by Kevin:

> I can decide how to coach and what to include and I think that makes it easier on everyone. Some coaching clinics, they try to force a style on you or tell you, like, you're doing it wrong and here's how to do it right. So yeah, I think just having this stuff [PPA resources] is a good way to help, you know, older coaches like me, who have established their style already and won't really change their stripes.

Altered Attitudes. The change in attitudes toward PPA was also highlighted as an important topic by coaches. Altered attitudes consisted of coaches expressing they had more favourable perceptions of PPA and its impact, athletes experiencing PPA, or the use of interventions to manage PPA. Following their interaction with the resources, many coaches reported more favourable attitudes toward PPA management strategies, regarding PPA as something they should be sensitive to, rather than shy away from. Shawn explained how his perceptions changed following his interactions with the resources, saying, "I think I've got a better handle on this stuff. Like, now I know that mental stuff isn't always the serious scary stuff I was afraid of walking into, and I can actually try helping some kids."

Further, some coaches explained that they felt a greater respect for PPA, as their perceptions of PPA and how they approach it changed through the study. Max expanded on this:

> I think I have a new perspective on what it [PPA] is. I've kind of had to take a step back and re-evaluate what I think preparation in sport looks like, cause like, we have a few kids who get pretty wound up before games and stuff, and I was always like 'yeah go buddy get excited to play', 'use that energy kind' of thing. And now I know, like yeah some kids feed off that and use it to get ready to play, but also there's a few of them where that's probably not the appropriate response for me to have and I should actually be helping them try to get back to baseline before a game to actually be helping them.

Delivery Method Impact. There were two specific factors (i.e., enriched learning, enhanced confidence) discussed by coaches as having been impacted by the structured delivery method of the PPA management resources via the SP4C website.

Enriched Learning. Coaches highlighted the nature of the guide as a factor positively impacting their learning. Several coaches expressed appreciation for the step-by-step

directionality of the guide, explaining that breaking down the information into sections and providing situational application examples enriched their learning experience and fostered continued use of the resources, combatting the potentially overwhelming nature of an informative KM tool. Simone explained how the guide fostered her learning:

> I think that it [the guide] really helped me focus my attention a bit more, because it broke everything down into sections and told me what I could try next or what worksheets went together, you know, that kind of thing. So yeah, I think, that made it way easier to like, learn the stuff instead of just reading through it all and kind of skimming through.

Enhanced Confidence. Coaches also suggested the guide supported their application of the information and strategies presented on the website, by offering suggestions for the most appropriate timing, duration, or situation to implement an intervention. The instructional nature of the guide offered the scaffolding for coaches to adapt and insert strategies and skills in their own practice, while feeling confident they could do it effectively. Jenna highlighted how the guide helped her feel confident in her ability to use strategies:

> I liked how it [the guide] was set up so it was like, this, then this, then this, and if this, then try this. It honestly just took a lot of the brain power out of it which I really appreciated, and it made me feel more confident to try stuff cause I know I was doing it correctly.

Further, many coaches expressed appreciation for how the guide broke down the information into smaller sections, explaining that the direction provided in the guide made them feel better about their ability to utilize the skills and strategies presented in the resources. Matthew emphasized this point:

> It [the guide] broke down these like semi-complex ideas and strategies into more, like, bite-sized things I could do. Which made me a bit more confident that I could tackle something, like, as serious, or like, complex as performance anxiety.

Discussion

This study aimed to provide coaches with accessible PPA management resources via the SP4C website and evaluate the efficacy of the website by assessing the resources' impact on coaches' knowledge of and attitudes towards PPA, coaching-related autonomy and competence, and intentions to use the information. Additionally, we examined how different delivery methods (i.e., structured, unstructured) influenced these outcomes. Our findings show that the SP4C website effectively increased coaches' knowledge and positive attitudes towards PPA, enhanced their autonomy and competence, and improved their intentions to use the information. These findings indicate the SP4C website is a viable KM tool that can be used to effectively provide evidence-informed sport psychology information to coaches. Further, provision of the guide in conjunction with the resources enhanced coaches' uptake of information and confidence in their abilities to implement the information in their practice, as both structured groups demonstrated significantly greater knowledge and competence scores than the unstructured groups.

Taken together, our findings imply that combining coaches' preference for informal, self-directed modes of learning with a structured guide enhanced their comprehension and retainment of the material presented. In the follow-up interviews, coaches explained they felt the PPA information was provided in an easily digestible, user-friendly way that supported their learning and helped them feel comfortable applying the information and strategies. Further, they felt the guide helped to support their learning, breaking complex information down into smaller, more comprehensible steps. This approach provided the self-directed, informal learning opportunity

preferred by coaches, while also offering enough structure to enhance the uptake of information (Nelson et al., 2006; Ryan & Deci, 2020), creating a two-pronged approach to KM that may be beneficial moving forward. Research in the education sector supports this approach, as it's been determined that providing structure in conjunction with an autonomy-supportive learning resource can increase both internalization of information and one's sense of competence fulfillment (Ryan & Deci, 2020). Increasing coaches' sense of competence has many positive outcomes when hoping to maximize KM. Increased confidence in one's ability can lead to more implementation of information, greater transfer of knowledge, and help to maintain engagement, all of which are elements contributing to the effectiveness of KM as per the KTA cycle (Graham et al., 2006; Ryan & Deci, 2020; Schunk & DiBenedetto, 2021).

Though autonomy-supportive resources can generate greater internalization of information (Ryan & Deci, 2020), participants in the pilot test reported being intimidated by the amount of information on the website, and the lack of guidance in navigation left many coaches unsure of how to proceed (Farhat et al., 2022), a concern echoed by several participants in the current study who received the unstructured delivery method. It was inferred that the autonomy afforded to coaches when navigating the website without direction undermined their feelings of competence and contributed to reduced motivation, discontinued use of the resources, and a more superficial understanding of information (Farhat et al., 2022; Ryan & Deci, 2020; Walker et al., 2018). Providing the structured guide allowed us to address coaches previously voiced concerns and mitigate the reported limitation whereby the autonomy-supportive nature undermined coaches' sense of competence, while also assessing how the provision of a guide impacted coaches' sense of autonomy. Our findings indicate this approach was effective, as the coaches who received the guide in conjunction with the resources reported greater internalization

of information and confidence in their ability to apply the information. Further, coaches' sense of autonomy was not thwarted by provision of the guide, even though it offered more stringent direction for how to utilize the resources. In follow-up interviews, coaches who received the guide explained that they used it as a roadmap to better tailor their efforts to the context of their coaching practice, rather than moving through all the information provided and trying it out. Coaches explained the guide helped them better recognize what would or would not be of use to them and it helped to direct their attention and better maximize their time.

It was important to gain an understanding of coaches' attitudes towards PPA within the current study, as a coach's learning is often impacted by their attitudes toward a topic (Barker & Winter, 2014; Stoszkowski & Collins, 2016). In their follow-up interviews, some coaches explained how prior to the study they did not feel PPA was as important to address as other, more physical aspects of sport, therefore they never sought out information or applied interventions in practice. However, these coaches further explained that, following their time with the resources, they felt increased empathy towards athletes managing PPA, reduced intimidation about the topic, and wanted to embrace a bigger supportive role within in their practice. Coaches' attitudes towards and perceptions of a topic can have a significant impact on how they seek out, interact with, and administer their knowledge to support athletes and therefore the effectiveness of KM occurring (Barker & Winter, 2014; Stoszkowski & Collins, 2016). There is limited research available regarding coaches' attitudes toward sport psychology (Zakrajsek et al., 2011), especially PPA, so this study allowed us to gain an understanding of where coaches stand on the topic and assess whether our intervention altered their perspectives. While our intervention fostered more favourable attitudes towards PPA, as coaches demonstrated greater positive attitudes following their interaction with the resources, we cannot draw any

conclusions regarding the role of delivery method. However, these enhanced positive attitudes toward PPA may contribute to coaches being more open-minded to learning about other sport psychology interventions, which in turn can help athletes view sport psychology more positively, and ease the implementation of information in practice (Barker & Winter, 2014).

As intentions are a key determinant of behavior (Ajzen, 1991), we evaluated coaches' intentions to use the provided resources. Overall, intentions increased after using the resources and were unaffected by delivery methods. However, the E-US group showed a slight decline in intentions from survey two to three, possibly due to the lack of a guide. This suggestion is supported by the usage data. Coaches in the structured groups adhered to the guide, as indicated by a higher average resource order score (86.1%) than the control groups (45.7%). Furthermore, the structured groups engaged with the website significantly more (987 minutes) than the unstructured groups (543 minutes), indicating that the guide likely enhanced both adherence and overall usage. Additionally, the greater competence fulfillment reported by the structured groups may have contributed to their sustained intentions to use the resources, while the lower competence scores in the unstructured groups may have contributed to lessened intentions, as competence influences motivation (Ryan & Deci, 2020). In follow-up interviews, coaches indicated that increased confidence in their ability to use the resources positively impacted their intentions to apply the information, aligning with comments made by coaches in the pilot test, who noted that lack of perceived competence often leads to lessened intentions to use resources (Farhat et al., 2022).

Although not central to our research questions, Google Analytics data revealed that experimental groups used the website more (908 minutes) compared to control groups (622 minutes). This increased usage may be attributed to the experimental groups receiving immediate

access to the website, suggesting the immediacy of information delivery following expressed interest may promote greater maintenance of use. Supporting this, educational research indicates that maintaining situational interest is crucial for sustained attention and learning (Harackiewicz et al., 2016). As time constraints often hinder coach education (Farhat et al., 2022), providing information promptly can capitalize on coaches' initial interest and improve engagement.

Limitations and Future Directions

While this study offered valuable insight into the efficacy of the SP4C website as a KM tool, it is not without limitation. The first of which was our sample size, as we did not meet the criteria to obtain statistical power. However, it's important to note that while our study was under power, we did still observe statistical significance and medium to large effect sizes at several assessment points, warranting further investigation with a larger sample to confirm and expand on these findings.

Another significant limitation of our study was the absence of an evaluation of knowledge use outcomes, specifically concerning athletes. Due to constraints in time and resources, we were unable to measure the impact of the PPA resources on athletes or gauge their receptiveness to the information conveyed by their coaches. So, although this study intended to address the sixth phase of the action cycle, it fell short by not gaining insight into athletes' experiences and perceptions, as no insight was gained into athlete's experiences and perceptions, both of which have the potential to impact coaches' maintained use of the resources. Though assessing coaches' knowledge is an important step in the KM process, future research should address this gap by incorporating a thorough evaluation of athletes' experiences alongside those of the coaches to provide a more comprehensive understanding of the efficacy of the website.

The scope of this study was also limited by use of adapted versions of the RoCKAS-CH (Rosenbaum, 2007), BPNSFS (Chen et al., 2015), and MISII (Moullin et al., 2018), as the adapted scales were not validated prior to implementation. Though we worked to mitigate this limitation by pilot testing the coach assessment survey with an independent group of coaches, we suggest future research validate the adapted scales prior to utilizing them as measurement tools.

Further, the adapted assessment of coaches' sense of autonomy was a limitation within the study, as it failed to measure the intended outcome effectively. While the assessment aimed to gauge coaches' autonomy in their coaching practice (e.g., did they feel they could choose how to apply the information?), this approach did not fully address our research question. Upon further reflection, the researchers believe that a more valuable focus would have been to assess coaches' autonomy in navigating the resources themselves (e.g., did they feel they could freely select and utilize the information and resources as they saw fit?).

A final limitation of this study was the role of the principal investigator (PI) in conducting the follow-up interviews during which participants were asked to express their opinions of the PPA resources, as participants were aware the PI developed said resources. While the PI emphasized their impartiality throughout the interviews and actively encouraged constructive feedback, the potential for social desirability bias in participants' responses cannot be ignored.

Conclusions

Many studies have highlighted the knowledge-to-action gap in sport psychology (e.g., Gould, 2016; Holt et al., 2018). The KTA framework provides a structured approach to address this gap by considering theoretical and contextual factors in KM (Graham et al., 2006; Holt et al., 2018). This study builds on previous research by revisiting early phases of the action cycle with

the aim of enhancing KM through the SP4C website (Farhat et al., 2022; Pope et al., 2015). Using an explanatory mixed-methods randomized controlled trial, we explored how different delivery methods affect the website's efficacy as a KM tool. Our findings contribute to the literature by demonstrating that delivering PPA information to coaches through an informal, synthesized, semi-structured approach enhances KM efficacy, improving coaches' knowledge, positive attitudes, sense of autonomy and competence in coaching, and intentions to use the information. This study provides a comprehensive overview of how information delivery affects coaches and suggests that researchers should offer synthesized research findings through autonomy-supportive learning opportunities, complemented by structured guidance. This approach is essential for fostering coaches' knowledge uptake and enhancing their sense of competence in practice.

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Figure 6

Overview of Study Protocol

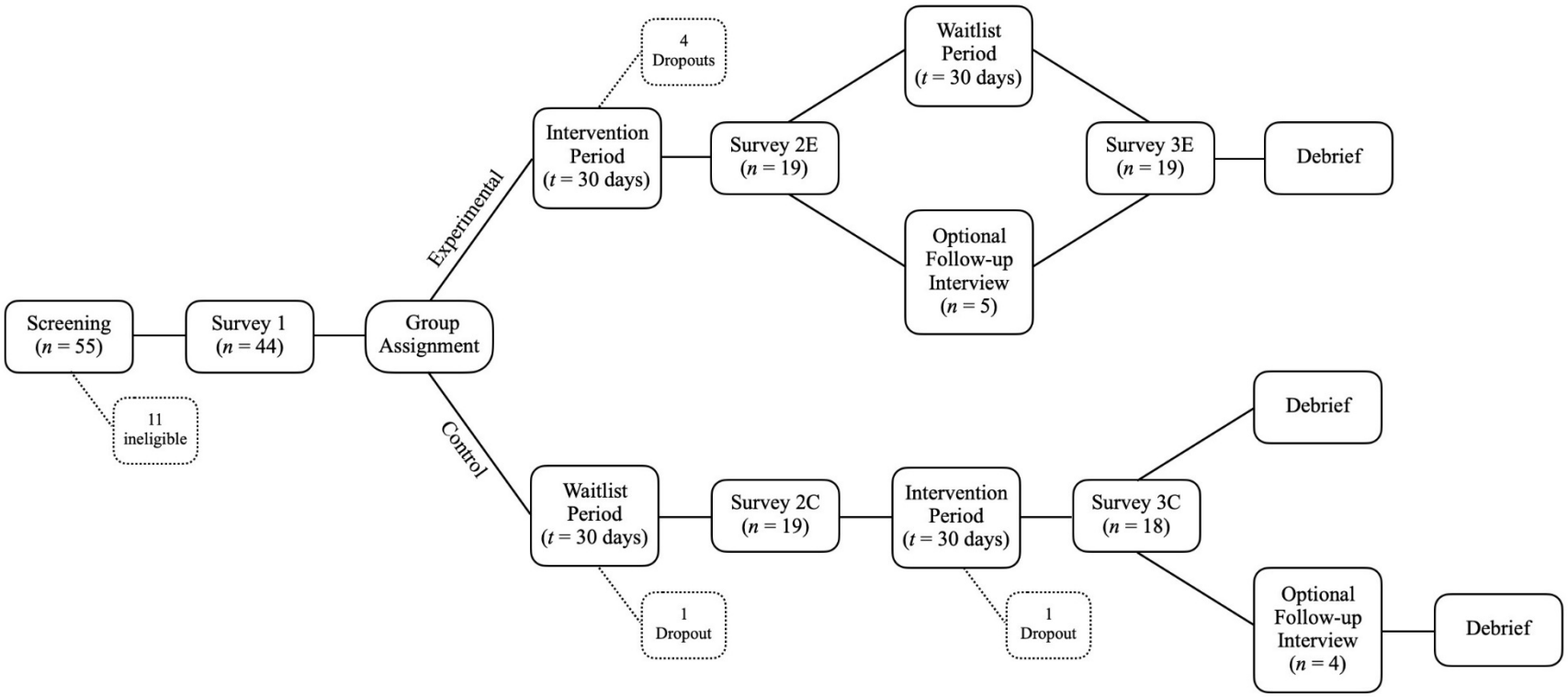
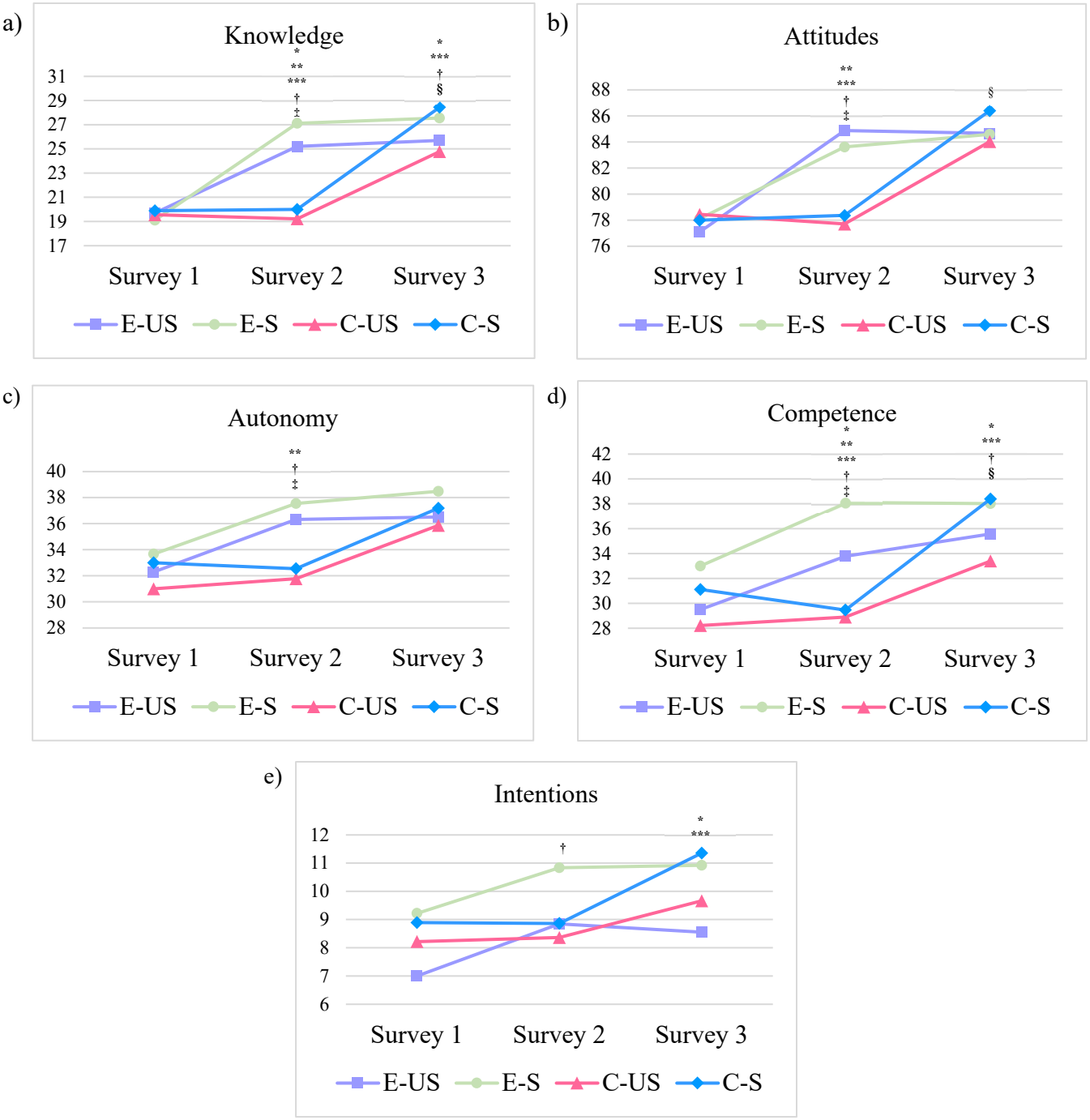


Figure 7

Changes Observed in Dependent Variables Across Study[3,4]



[3] Note: Knowledge range = 0-30; Attitudes range = 18-90; Autonomy range = 8-40; Competence range = 8-40; Intentions range = 0-12

[4] Note: * = significant difference between E-US and E-S; ** = significant difference between E-US and C-US; *** = significant difference between E-US and C-S; † = significant difference between E-S and C-US; ‡ = significant difference between E-S and C-S; § = significant difference between C-US and C-S

Table 1

Follow-up Interview Participant Pseudonyms and Demographics

Participant Pseudonym	Group Assignment	Sport Coached	Current Level of Competition Coached	Years of Experience	Time Spent Coaching per week (hours)	Time Spent on Website (mins)
Bob	C-US	Athletics	Provincial/National/International	18	10	14.00
Sidney	E-US	Hockey	Competitive	3	56	53.00
Simone	C-S	Volleyball	Competitive	8	5	45.00
Kevin	C-US	Soccer	Competitive	22	28	32.00
Shawn	E-US	Hockey	Recreational	20	12	82.00
Oscar	E-S	Volleyball	Competitive	12	7	59.00
Jenna	E-S	Volleyball	Competitive	10	6	67.00
Matthew	E-S	Football	Competitive	14	15	91.00
Max	C-S	Soccer	Competitive	5	4	84.00

Table 2

Means and Adjusted Means by Group[5]

Group	Survey	Knowledge		Attitudes		Autonomy		Competence		Intention	
		M(*SD*)	M_{adj}(*SE*)	*M*(*SD*)	M_{adj}(*SE*)	*M*(*SD*)	M_{adj}(*SE*)	*M*(*SD*)	M_{adj}(*SE*)	*M*(*SD*)	M_{adj}(*SE*)
E-US	1	19.70 (3.02)	-	77.10 (4.70)	-	32.30 (3.16)	-	29.50 (2.37)	-	7.00 (2.11)	-
	2	25.20 (2.53)	25.20 (2.53)	84.30 (3.59)	84.88 (0.47)	36.20 (4.47)	36.33 (.96)	33.50 (3.03)	33.78 (.83)	8.30 (1.25)	8.85 (.53)
	3	25.70 (2.36)	25.70 (2.36)	84.40 (2.41)	84.67 (0.53)	36.50 (2.51)	36.51 (.66)	35.50 (1.08)	35.58 (.47)	8.60 (2.37)	8.55 (.57)
E-S	1	19.11 (4.08)	-	78.10 (2.32)	-	33.67 (3.78)	-	33.00 (5.15)	-	9.22 (2.17)	-
	2	27.11 (2.42)	27.11 (2.42)	83.78 (1.92)	83.62 (0.50)	38.33 (2.12)	37.54 (1.03)	38.89 (1.27)	38.11 (.93)	11.22 (1.09)	10.83 (.54)
	3	27.56 (2.30)	27.56 (2.30)	84.67 (1.58)	84.59 (0.55)	38.56 (2.35)	38.49 (.70)	38.22 (1.79)	38.01 (.52)	10.89 (1.45)	10.92 (.58)
C-US	1	19.56 (2.79)	-	78.44 (3.54)	-	31.00 (3.46)	-	28.22 (2.68)	-	8.22 (2.11)	-
	2	19.22 (2.39)	19.22 (2.39)	78.11 (3.72)	77.71 (0.50)	30.78 (2.64)	31.77 (1.04)	28.22 (2.54)	28.89 (.91)	8.33 (2.06)	8.37 (.53)
	3	24.78 (0.97)	24.78 (0.97)	84.22 (2.49)	84.04 (0.56)	35.78 (1.48)	35.87 (.71)	33.22 (1.72)	33.40 (.51)	9.67 (1.41)	9.66 (.56)
C-S	1	19.89 (3.10)	-	78.00 (3.04)	-	33.00 (4.15)	-	31.11 (3.79)	-	9.89 (1.36)	-
	2	20.00 (2.50)	20.00 (2.50)	78.44 (2.07)	78.37 (0.50)	32.89 (5.26)	32.55 (1.02)	29.67 (3.71)	29.46 (.87)	9.11 (2.37)	8.86 (.53)
	3	28.44 (1.33)	28.44 (1.33)	86.44 (1.33)	86.41 (0.55)	37.22 (1.64)	37.19 (.70)	38.44 (1.24)	38.39 (.49)	11.33 (1.00)	11.36 (.57)

[5] Note: Knowledge range = 0-30; Attitudes range = 18-90; Autonomy range = 8-40; Competence range = 8-40; Intentions range = 0-12

Chapter 4: General Discussion & Conclusions

Guided by the KTA framework, the purpose of this study was to build upon prior work conducted with the SP4C website to gain a comprehensive understanding of the impact delivery modality has on the efficacy of the website as a KM tool delivering novel PPA resources to coaches. To do this, we developed four research questions: (1) Do the provided PPA resources affect coaches' knowledge of and attitudes toward PPA and does delivery method influence the effect? (2) Do the provided PPA resources affect coaches' autonomy and competence and does delivery method influence the effect? (3) Do the provided PPA resources affect coaches' intentions to use and interact with the provided PPA resources and does the delivery method influence the effect? (4) How do the provided PPA resources and their delivery method influence coaches' knowledge of and attitudes toward PPA, and autonomy and competence within their practice?

The SP4C website was developed as a KM tool to offer sport psychology resources to coaches, aligning with their preference for informal, self-directed learning methods. Despite its potential, previous research by Farhat and colleagues (2022) highlighted several limitations. Specifically, the website's lack of guidance resulted in inadequate user retention, poor knowledge acquisition, and diminished sense of competence among coaches. Additionally, the website's effectiveness was previously tested with only eight varsity coaches from a single institution, raising concerns about its broader applicability and generalizability. To address these shortcomings, the current study evaluated the website's effectiveness as a KM tool more comprehensively. This evaluation involved the introduction of novel resources targeting PPA and the implementation of a structured guide aimed at improving the user experience. The structured guide was designed to facilitate better navigation through the website's content,

thereby addressing the previously noted issues and supporting coaches more effectively in their learning journey. By expanding the scope of the pilot test and refining the website's features, this study sought to improve both user engagement and the efficacy of the SP4C website.

To address coaches' established interest in anxiety-related information (Farhat et al., 2022; Pope et al., 2015) and the prevalence of PPA among athletes (Rowland & Lankveld, 2019), we developed novel resources targeting PPA management. These resources were created following a narrative review of the literature (see Stevens et al., in review) and were centered around five critical topics identified in the academic research: Symptoms and Interpretation of PPA, Self-Confidence Support, Cognitive Restructuring, Performance Routines, and Support and Reflection (Stevens et al., in review). The development process resulted in over twenty novel resources and accompanying supplementary materials that framed the relevance of each resource (see Appendix M). These materials were made available to coaches in the current study to enrich their understanding of PPA and to evaluate the effectiveness of various delivery methods (i.e., structured, unstructured). To further address coaches' concerns about the previous lack of guidance (Farhat et al., 2022), we introduced a structured guide (see Appendix F). This guide was designed to assist coaches in effectively navigating the PPA management resources by providing detailed instructions on the timing of interventions, practical application of strategies, and the target audience for each resource (e.g., coach or athlete). This approach aimed to enhance usability and support coaches in integrating the resources into their practice, thereby improving the overall efficacy of the website as a KM tool.

Our study found that providing PPA management resources significantly enhanced coaches' knowledge of PPA, fostered more favorable attitudes towards PPA, and improved their sense of autonomy and competence within their coaching practice. Additionally, coaches'

intentions to utilize the resources were positively affected. Further, the effectiveness of the resources in boosting coaches' knowledge and competence was notably greater when accompanied by the structured guide. These results are crucial as they address a major limitation identified in the previous research – the lack of direction which impeded knowledge uptake and practical implementation (Farhat et al., 2022). The inclusion of a structured guide effectively mitigated these barriers to KM and supported the integration of the resources into coaches' practices. According to Ryan and Deci (2020), structured guidance can enhance the learning process by providing the necessary scaffolding. By incorporating this guide, we supplied the scaffolding upon which coaches could build their practice and effectively apply the PPA resources, thereby facilitating a more supportive and actionable learning experience. This approach not only overcame the barriers highlighted in the pilot test but also reinforced the utility of structured guidance in optimizing KM tools for coaches.

From a practical standpoint, our findings indicate that the SP4C website is a highly effective KM tool for disseminating sport psychology research to coaches. The website not only presents research findings in a user-friendly and easily digestible format but also significantly enhances coaches' knowledge uptake, autonomy in coaching, and confidence in applying the information practically. Previous research highlighted the value of the SP4C website for providing sport psychology information tailored to coaches' preferences for informal and autonomy-supportive learning methods (Farhat et al., 2022; Nelson et al., 2006; Pope et al., 2015). Our study extends this evaluation by testing the SP4C website on a larger scale, involving a demographically broader sample and assessing the impact on multiple dimensions of coaching practice. This comprehensive approach allowed us to better understand coaches' experiences and validate earlier findings. The results affirm that the SP4C website effectively addresses the

barriers to accessing resources that coaches, particularly those with less experience, lower certification, or operating at less competitive levels, often encounter (Pope et al., 2015). This reinforces the website's role as a valuable resource in bridging the gap between research and practical application in coaching.

The enhanced knowledge outcomes suggest the website and structured delivery modality offer a worthwhile means of disseminating research findings to coaches in a meaningful and effective way. Currently, there is no roadmap for how best to disseminate sport psychology research to coaches, however, the current study provides insight into one effective method through which coaches have reported positive impact and increased knowledge uptake. The SP4C website offers an informal learning resource that funnels the findings of sport psychology research to the intended beneficiaries in a time-efficient, easily accessible, reliable, and comprehensible way, while the guide helps to provide situation-specific insights and examples without creating the echo chamber of information that can often occur in the field of coaching (Stoszkowski & Collins, 2016). There is no one-size-fits-all roadmap for how to present research findings (Bartlett & Drust, 2021; Gould, 2016). However, the insights gained in the current study can certainly help to inform future researchers of how to maximize KM, as creating autonomy-supportive, informal KM tools supplemented with an element of structured guidance may help future researchers more effectively translate their research findings into the field of practice and close the knowledge-to-action gap currently observed (Gould 2016; Holt et al., 2018).

Bartlett and Druska (2021) highlighted the importance of collaboration between academia and sport practitioners in bridging the knowledge-to-action gap currently observed in the field. That is, researchers must work in conjunction with coaches to find the gaps in knowledge, assess the needs of the population, and adapt the research for appropriate and effective delivery. The

2022 pilot test began collaboration with coaches regarding the effectiveness of the SP4C website as a KM tool (Farhat et al., 2022), gaining insight into their experiences with the resources and acquiring the feedback that informed development of the current study. Farhat and colleagues' (2022) findings lent themselves to the revisitation of phases three through five of the action cycle, allowing the current study to address the concerns voiced by coaches and assess the outcomes of doing so. To do this, we employed the action cycle and utilized the prior collaboration between academia and coaches to address coaches' concerns and adapt the delivery of information, monitor knowledge use, and evaluate knowledge use and outcomes (Graham et al., 2006). Moreover, we continued conversation with coaches, conducting follow-up interviews to gain further insight into their experiences with the resources and adapted delivery method. The findings of the current study suggest that adapting the website to incorporate more structured elements of delivery throughout would encourage knowledge uptake and foster a greater sense of competence fulfillment in coaches, strengthening the website as a KM tool. Several coaches provided insight into these findings, expressing their appreciation for the guide, highlighting how it supplemented their learning and promoted their sense of competence within their coaching practice. The collaboration between researchers and coaches in the current study allowed these conclusions to be drawn and will help to inform presentation of information on the SP4C website moving forward. Development of further guides for each topic of information provided on the website could be a worthwhile venture to support coaches looking to expand their knowledge in other areas of sport psychology (i.e., imagery, goal setting, concentration). Any future guides should focus on where to begin, how to proceed through information, examples of application of strategies in practice, and suggestions for what resources to use in varying situations.

The knowledge-to-action gap in sport psychology limits the application of research findings and impedes the professional growth of coaches (Williams & Kendall, 2007). Despite this, there has been limited exploration into how coaches interact with online sport psychology resources (Farhat et al., 2022). This study offers critical insights into coaches' experiences with the SP4C website, an online KM tool designed to bridge this gap. Our findings build upon previous research related to the SP4C website, demonstrating that the platform effectively enhances knowledge uptake and coaching competence. Notably, the integration of a guided delivery method significantly improves these outcomes compared to unguided approaches. The structured guidance not only helps coaches navigate the resources more effectively but also reinforces their learning and application of sport psychology principles. Additionally, our study provides a valuable foundation for future work aimed at improving the dissemination of sport psychology findings. The combination of informal, autonomy-supportive learning with structured guidance emerged as a promising strategy for fostering KM and supporting coaches in integrating research into practice. This approach could serve as a model for developing other KM tools and resources aimed at enhancing coaching practices and athlete support through evidence-based research.

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Appendix A

Coach Recruitment Poster

Research Participants Wanted

Delivering Sport Psychology Resources to Coaches

Who Can Participate?

Sport coaches 18 or older who are able to read English fluently and have access to the internet

What will I be asked to do?

- If eligible, you will be asked to interact with a website providing sport psychology information, skills, and strategies for coaches to utilize when helping athletes manage pre-performance anxiety
- Complete 3 online surveys (15-20 minutes each) over a two-month period
- Optional participation in a virtual follow-up interview

Participation is voluntary and confidential. This study has been reviewed for ethical acceptability and approved by the University of Alberta Research Ethics Office (#Pro00132563)

Interested? Follow the link or QR code

or contact the principal investigator, Courtney Stevens, at courtney.stevens@uleth.ca

https://uleth.qualtrics.com/jfe/form/SV_57MinPwWrsVcuKW

University of Lethbridge

Appendix B

Coach Recruitment Letter

Hi,

My name is Courtney Stevens and I am currently a graduate student at the University of Lethbridge conducting sport psychology research regarding coaches and their use of online sport psychology resources.

Our research team is looking to recruit coaches to participate in our current research study *Exploring the impact of delivering sport psychology resources to coaches via the Sport Psychology for Coaches website*. This study is non-invasive and conducted virtually. Via the Sport Psychology for Coaches website, previously established by four academics, we will be providing coaches with sport psychology resources, skills, and strategies for management of pre-performance anxiety in athletes.

The study consists of three surveys, and an optional virtual interview at some point within the two-month study period. Throughout the study, coaches will receive access to sport psychology resources regarding pre-performance anxiety management in athletes. Coaches will receive access to these resources either within the first or the second month of participation, and will retain access following conclusion of the study. The time commitment coaches wish to make is entirely up to them; the surveys take approximately 10-15 minutes each, and then coaches can decide how much time they want to spend looking at the resources.

This study is voluntary and confidential and has been reviewed for ethical acceptability and approved by the University of Alberta Research Ethics Office (Pro00132563).

If you wish to learn more about the study, or are interested in participating, you can follow the link here: https://uleth.qualtrics.com/jfe/form/SV_57MinPwWrsVcuKW

This email can also be forwarded to any organizations or individuals you feel may be interested.

Please do not hesitate to reach out if you have any questions.

Thank you for your time.

~

Courtney Stevens (she/her), BA Psychology
Masters Student
Psychology for Active Living and Sport (PALS) Lab
Department of Kinesiology & Physical Education
University of Lethbridge

University of Lethbridge

Appendix C

Participant Letter of Consent

Exploring the impact of delivering sport psychology resources to coaches via the Sport Psychology for Coaches website.

Principal Investigator(s) (Student): Courtney Stevens
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Co-Investigator(s) (Supervisor): Dr. Paige Pope
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Invitation to Participate: You are invited to participate in this research study exploring the impact of delivering sport psychology resources to coaches via the Sport Psychology for Coaches website. To be eligible, you must be in an active coaching position for the next two months, have continued access to an electronic device with an internet connection, and be able to read and speak English fluently.

Purpose of the Study: From this research, we wish to explore how the delivery of pre-performance anxiety management resources to coaches impacts their use of online sport psychology resources, their perceptions of pre-performance anxiety, and how their coaching practice may be impacted by the delivery of these resources. We will also examine various characteristics of coaches (e.g., sport coached, competition level coached) in relation to their individual perceptions and usage of the website.

Participation: If you wish to participate in this study, please complete the following survey that should take approximately 5-20 minutes to complete. You do not have to answer any questions that you do not want to answer. Once you have completed the survey, please choose the 'submit survey' option at the end of the questionnaire. Following completion of this survey, the principal investigator will contact you to outline your next steps. You will be randomly placed into one of four groups: a) Group 1, b) Group 2, c) Waitlist Group 1, or d) Waitlist Group 2. The duration of this study is two-months, during which you will complete two more surveys (5-20 minutes each) and receive access to informative sport psychology resources regarding the management of pre-performance anxiety in athletes via the Sport Psychology for Coaches website. You will be asked

to interact with and use these resources over a 30-day period. Please view and use the resources at your own pace and as often as you wish.

Optional Follow-up Interview: After your 30-day interaction period with the resources, you will also have the option to participate in a 1-on-1 virtual interview with the study organizer. Interviews will occur via Zoom, and you will have the option to have your camera on or off to ensure anonymity if desired. Interview duration will be approximately 30 minutes-90 minutes. The purpose of these interviews is to discuss your experience with the pre-performance anxiety resources and tell us how using them may have impacted your athlete(s) and/or your coaching practice. These interviews provide you with the opportunity to give us feedback about what you liked or didn't like, what worked or didn't work, and what changes you would like to see made to the website and resources. Participation in an interview is completely voluntary and anonymous, there are no consequences for not participating in an interview and no questions will be asked regarding the reason for not participating.

Benefits: You will gain access to information and resources regarding sport psychology strategies and skills for helping athletes manage pre-performance anxiety.

Risks: You will be presented with informative resources regarding pre-performance anxiety in athletes. The content is not designed to test you, however, intense concentration may be required as there is a large amount of content available to you, so please ensure you move through the information at your own pace.

Confidentiality and Anonymity: All information you share and data collected will remain strictly confidential and will be used solely for the purpose of this research. The research data will only be accessible to the research team consisting of the principal investigator and co-investigator. Your answers to all questions may be used in presentations and publications but neither you (nor your organization) will be identified, as an anonymous participant ID will be assigned to all data and fake names will be created for interview data. In order to minimize the risk of security breaches and to help ensure your confidentiality we recommend that you use standard safety measures such as signing out of your account, closing your browser, and locking your screen or device when you are no longer using them/when you have completed the study. Audio-recordings taken during the optional follow-up interviews will be used solely for the purpose of this research. The results of this study will be published in pooled (aggregate) format. We will be collecting personal identifiers such as participant's name, email address, and age at the time of data collection. Appropriate procedures will be implemented to ensure that personal identifiers are not released. Only the primary investigator (Courtney Stevens) and supervisor (Dr. Paige Pope) will have access to the names, email addresses, and ages of participants (via Qualtrics). Further, data will be retained for 5 years following publication of the findings before being deleted.

Data Storage: Electronic copies of surveys will be encrypted and stored on a password protected computer in a locked lab at the University of Lethbridge. Audio-recordings will be downloaded and stored on a password protected computer in a locked lab at the University of Lethbridge.

Voluntary Participation: You are under no obligation to participate and if you choose to participate, you may refuse to answer questions that you do not want to answer. Your participation in this research is completely voluntary. Your continued participation should be as informed as your initial consent, so please feel free to ask for clarification or new information throughout your participation. If you choose to withdraw from the study at any point, you may do so, and you may choose to have all your data removed if you wish by simply informing one of the researchers of your decision. To communicate any questions or a desire to withdraw from the study, please email the principal investigator (courtney.stevens@uleth.ca). There are no consequences for withdrawal from this study and no questions will be asked regarding the reason for withdrawal.

Information about the Study Results: Once the data has been collected and analyzed, findings will be presented at an aggregate level in an unpublished graduate thesis, academic presentations, and submitted for publication in scholarly journals. Participants will be able to view the results of the study if they are published in an academic journal.

Final Data Withdrawal: Following completion of participation in this study, you will receive a debrief letter. After receiving this debrief letter, you will have one week to withdraw your data from the study if you no longer with to participate. To do so, please contact the principal investigator via the methods listed below. Once the one-week period is up, you will no longer be able to withdraw your data from the study. There are no consequences for withdrawing your data from this study and no questions will be asked regarding the reason for withdrawal of the data.

Contact Information: If you have any questions or require more information about the study itself, you may contact the principal investigator (Courtney Stevens) or her co-investigator/supervisor (Dr. Paige Pope) through the methods mentioned herein.

The outline of this study has been reviewed by a Research Ethics Board at the University of Alberta (Pro00132563). If you have any questions regarding your rights as a research participant or how the research is being conducted, you may contact the Research Ethics Office at 780-492-2615.

Please keep this form for your records. To do so, please print this page.

Completion and submission of the survey means you are consenting to participate in this research.

Appendix D

Survey 1

Participant Consent
(Version 2, 08/25/23)
Exploring the impact of delivering sport psychology resources to coaches via the Sport Psychology for Coaches website.

Principal Investigator(s) (Student): Courtney Stevens
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Invitation to Participate: You are invited to participate in this research study exploring the impact of delivering sport psychology resources to coaches via the Sport Psychology for Coaches website. To be eligible, you must be in an active coaching position for the next two months, have continued access to an electronic device with an internet connection, and be able to read and speak English fluently.

Purpose of the Study: From this research, we wish to explore how the delivery of pre-performance anxiety management resources to coaches impacts their use of online sport psychology resources, their perceptions of pre-performance anxiety, and how their coaching practice may be impacted by the delivery of these resources. We will also examine various characteristics of coaches (e.g., sport coached, competition level coached) in relation to their individual perceptions and usage of the website.

Participation: If you wish to participate in this study, please complete the following survey that should take approximately 5-20 minutes to complete. You do not have to answer any questions that you do not want to answer. Once you have completed the survey, please choose the 'submit survey' option at the end of the questionnaire. Following completion of this survey, the principal investigator will contact you to outline your next steps. You will be randomly placed into one of four groups: a) Group 1, b) Group 2, c) Waitlist Group 1, or d) Waitlist Group 2. The duration of this study is two-months, during which you will complete two more surveys (5-20 minutes each)

and receive access to informative sport psychology resources regarding the management of pre-performance anxiety in athletes via the Sport Psychology for Coaches website. You will be asked to interact with and use these resources over a 30 day period, please view and use the resources at your own pace and as often as you wish.

Optional Follow-up Interview: After your 30-day interaction period with the resources, you will also have the option to participate in a 1-on-1 virtual interview with the study organizer. Interviews will occur via Zoom, and you will have the option to have your camera on or off to ensure anonymity if desired. Interview duration will be approximately 30 minutes-90 minutes. The purpose of these interviews is to discuss your experience with the pre-performance anxiety resources and tell us how using them may have impacted your athlete(s) and/or your coaching practice. These interviews provide you with the opportunity to give us feedback about what you liked or didn't like, what worked or didn't work, and what changes you would like to see made to the website and resources. Participation in an interview is completely voluntary and anonymous, there are no consequences for not participating in an interview and no questions will be asked regarding the reason for not participating.

Benefits: You will gain access to information and resources regarding sport psychology strategies and skills for helping athletes manage pre-performance anxiety.

Risks: You will be presented with informative resources regarding pre-performance anxiety in athletes. The content is not designed to test you, however, intense concentration may be required as there is a large amount of content available to you, so please ensure you move through the information at your own pace.

Confidentiality and Anonymity: All information you share and data collected will remain strictly confidential and will be used solely for the purpose of this research. The research data will only be accessible to the research team consisting of the principal investigator and co-investigator. Your answers to all questions may be used in presentations and publications but neither you (nor your organization) will be identified, as an anonymous participant ID will be assigned to all data and fake names will be created for interview data. In order to minimize the risk of security breaches and to help ensure your confidentiality we recommend that you use standard safety measures such as signing out of your account, closing your browser, and locking your screen or device when you are no longer using them/when you have completed the study. Audio-recordings taken during the optional follow-up interviews will be used solely for the purpose of this research. The results of this study will be published in pooled (aggregate) format. We will be collecting personal identifiers such as participant's name, email address, and age at the time of data collection. Appropriate procedures will be implemented to ensure that personal identifiers are not released. Only the primary investigator (Courtney Stevens) and supervisor (Dr. Paige Pope) will have access to the names, email addresses, and ages of participants (via Qualtrics). Further, data will be retained for 5 years following publication of the findings before being deleted.

Data Storage: Electronic copies of surveys will be encrypted and stored on a password

protected computer in a locked lab at the University of Lethbridge. Audio-recordings will be downloaded and stored on a password protected computer in a locked lab at the University of Lethbridge.

Voluntary Participation: You are under no obligation to participate and if you choose to participate, you may refuse to answer questions that you do not want to answer. Your participation in this research is completely voluntary. Your continued participation should be as informed as your initial consent, so please feel free to ask for clarification or new information throughout your participation. If you choose to withdraw from the study at any point, you may do so, and you may choose to have all your data removed if you wish by simply informing one of the researchers of your decision. To communicate any questions or a desire to withdraw from the study, please email the principal investigator (courtney.stevens@uleth.ca). There are no consequences for withdrawal from this study and no questions will be asked regarding the reason for withdrawal.

Information about the Study Results: Once the data has been collected and analyzed, findings will be presented at an aggregate level in an unpublished graduate thesis, academic presentations, and submitted for publication in scholarly journals. Participants will be able to view the results of the study if they are published in an academic journal.

Final Data Withdrawal: Following completion of participation in this study, you will receive a debrief letter. After receiving this debrief letter, you will have one week to withdraw your data from the study if you no longer with to participate. To do so, please contact the principal investigator via the methods listed below. Once the one-week period is up, you will no longer be able to withdraw your data from the study. There are no consequences for withdrawing your data from this study and no questions will be asked regarding the reason for withdrawal of the data.

Contact Information: If you have any questions or require more information about the study itself, you may contact the principal investigator (Courtney Stevens) or her co-investigator/supervisor (Dr. Paige Pope) through the methods mentioned herein.

The outline of this study has been reviewed by a Research Ethics Board at the University of Alberta (Pro00132563). If you have any questions regarding your rights as a research participant or how the research is being conducted, you may contact the Research Ethics Office at 780-492-2615.

Please keep this form for your records. To do so, please print this page.

Completion and submission of the survey means you are consenting to participate in this research.

After having read the above letter of informed consent, do you consent to participating in this research study?

- ○ Yes I consent to participating
- ○ No I do not consent to participating

End of Block

Start of Block

The following questions will determine your eligibility to participate in this research study.

Do you reliably have access to an electronic device with an internet connection?

- ○ Yes
- ○ No

Are you able to speak and read English fluently?

- ○ Yes
- ○ No

For the next two months, how many sessions will you coach each month?

_____

Have you used the Sport Psychology for Coaches website before?

- ○ Yes
- ○ No
- ○ Unsure

End of Block

Start of Block

You are eligible to participate in this research study. Please answer the following questions as accurately and honestly as possible.

Please enter your full name

_____

Please provide your email address

_____

Age

_____

Location

_____

What is your highest level of education?

- ○ 12th grade or less
- ○ Graduated high school or equivalent
- ○ Some college/university, no degree
- ○ College Diploma
- ○ Bachelor's degree
- ○ Post-graduate degree (i.e., Master's, PhD)
- ○ Other (please specify) _____

What is the highest coaching certification you have received?

_____

Have you previously used any online sport psychology resources?

- ○ Yes
- ○ No
- ○ Unsure

Do you currently use any online sport psychology resources?

- ○ Yes
- ○ No
- ○ Unsure

Have you ever accessed resources providing information about pre-performance anxiety in sport?

- ○ Yes
- ○ No
- ○ Unsure

Have you considered yourself an athlete in the past?

- ○ Yes
- ○ No

Do you currently consider yourself an athlete?

- ○ Yes
- ○ No

What sport(s) are you currently coaching?

_____

Please indicate the age range of the athlete(s) you currently coach (ie. 16-18, 26, 14 & 25)

_____

What level of competition are you currently coaching at?

- ○ Non-competitive
- ○ Recreational
- ○ Competitive
- ○ College/University
- ○ Provincial/National/International
- ○ Professional
- ○ Other (please specify) _____

Please estimate the average amount of time you spend coaching per week (in hours)

_____

Please estimate the amount of coaching experience you currently have (in weeks/months/years)

_____

Please indicate your current reason for coaching (ie. child involved, volunteer experience)

_____

End of Block

Start of Block

Please answer the following questions about the extent to which you intend to use the pre-performance anxiety resources provided by the Sport Psychology for Coaches Website

	Definitely Not	Probably Not	Possibly	Very Probably	Definitely
I plan to use pre-performance anxiety **information and strategies** from the Sport Psychology for Coaches website with my athletes in the next month	○	○	○	○	○
I plan to utilize pre-performance anxiety **worksheets** from the Sport Psychology for Coaches website in the next month	○	○	○	○	○
I will use all aspects of the pre-performance anxiety **skills and strategies** from the Sport Psychology for Coaches website with my athletes in the next month	○	○	○	○	○

The following statements concern your current feelings about the implementation of pre-performance anxiety information in your coaching practice. Please indicate how true each of the following statements is for you in your current coaching situation.

	Completely Untrue		Moderately True		Completely True
I feel a sense of choice and freedom in how I implement pre-performance anxiety information in my coaching practice	○	○	○	○	○
I feel that using pre-performance anxiety information reflects what I am trying to accomplish in my coaching practice	○	○	○	○	○
I feel that choosing to use pre-performance anxiety strategies aligns with my coaching methodology	○	○	○	○	○
I feel I am able to effectively navigate information about pre-performance anxiety management	○	○	○	○	○
I feel like “I have to” incorporate pre-performance anxiety information in my coaching practice	○	○	○	○	○

I feel forced to use pre-performance anxiety strategies I wouldn't choose to try	○	○	○	○	○
I feel I am unable to effectively navigate information about pre-performance anxiety management	○	○	○	○	○
Incorporating pre-performance anxiety information and strategies into my coaching practice feels like an obligation	○	○	○	○	○
I feel confident that I can effectively teach pre-performance anxiety strategies in my coaching practice	○	○	○	○	○
I feel capable of implementing pre-performance anxiety strategies into my coaching practice	○	○	○	○	○
I feel competent when navigating information about pre-performance anxiety management	○	○	○	○	○

I feel I can successfully implement difficult pre-performance anxiety management strategies in my coaching practice	○	○	○	○	○
I have serious doubts about whether I can use pre-performance anxiety management strategies in my coaching practice	○	○	○	○	○
I feel disappointed with my previous efforts of incorporating pre-performance anxiety information into practice	○	○	○	○	○
I do not feel competent when navigating information about pre-performance anxiety management	○	○	○	○	○
I feel like a failure when I struggle to integrate pre-performance anxiety management skills and strategies into my coaching practice	○	○	○	○	○

End of Block

Start of Block

Please read the following statements and select TRUE or FALSE for each question.

	True	False	Not Sure
Pre-performance anxiety impacts only 10% of athletes (Pre-performance anxiety: heightened mental and/or physiological arousal that occurs before an athlete partakes in a sports event or action within sport)	○	○	○
Developing a pre-performance or pre-event plan for managing pre-performance anxiety symptoms is less effective than developing a plan after an athlete experiences symptoms	○	○	○
Anxiety symptoms can be helpful or harmful to an athlete's performance	○	○	○
An athlete's well-being (both within and outside of sport) can be impacted by pre-performance anxiety	○	○	○

How an athlete perceives their coaches' standard for success can impact how likely they are to experience pre-performance anxiety	○	○	○
An athlete's response to anxiety can be constructive or destructive (Constructive: helpful) (Destructive: harmful)	○	○	○
Older athletes are more likely to experience physical symptoms of pre-performance anxiety	○	○	○
Cognitive restructuring requires an athlete to reflect on their experiences (Cognitive Restructuring: a strategy for taking away the power of negative thoughts and feelings brought on by pre-performance anxiety)	○	○	○
An athlete's sense of control can impact the degree to which they experience pre-performance anxiety.	○	○	○

Both pre-performance routines and superstitions can help athletes manage pre-performance anxiety (Pre-performance routine: a set of task-relevant cognitive and behavioral strategies carried out prior to a specific skill or action) (Superstition: repetitive sequence of actions, movements, or processes completed prior to a sporting event or action)	○	○	○
An athlete's sense of confidence can help to regulate anxiety responses.	○	○	○
Pre-performance routines should be developed by the coach and given to the athlete to carry out.	○	○	○
Team athletes are more likely to experience pre-performance anxiety than individual athletes	○	○	○
Athletes returning from injury are less likely to experience pre-performance anxiety	○	○	○

Athletes are just as likely to experience pre-performance anxiety at home events in comparison to away events	○	○	○
Creating a long-term goal for athletes to focus on can help them manage pre-performance anxiety	○	○	○
An athlete experiencing pre-performance anxiety may lash out at their coach, teammate, or opponent	○	○	○
Pre-performance anxiety can occur in both games and practices	○	○	○
Implementing a performance routine to manage pre-performance anxiety is less effective for less experienced athletes	○	○	○

Please read the following scenario and select TRUE or FALSE for each question that follows the scenario.

Scenario 1: Player X is your most accurate shooter in practice. However, you notice they often

miss their shots when warming up for a game. They also seem less confident and more withdrawn from their teammates on game days.

	True	False	Not Sure
Player X is likely experiencing pre-performance anxiety	○	○	○
A pre-performance routine may help Player X with their performance	○	○	○

Please read the following scenario and select TRUE or FALSE for each question that follows the scenario.
Scenario 2: Player Y is acting excessively confident prior to the championship game.

	True	False	Not Sure
Player Y is likely experiencing pre-performance anxiety.	○	○	○

Directions: For each statement select the option that best describes how you feel about each statement as it relates to your coaching practice

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that my coaching strategy should not have to change for an athlete experiencing pre-performance anxiety	○	○	○	○	○

I feel that coaches need to be extremely cautious when determining whether to intervene if an athlete is experiencing pre-performance anxiety	○	○	○	○	○
I feel that skills and strategies can be utilized to help with the management of pre-performance anxiety	○	○	○	○	○
I feel that professional athletes are more likely to experience pre-performance anxiety than other athletes	○	○	○	○	○
I feel that pre-performance anxiety is not as important as a physical element in sport	○	○	○	○	○
I feel that an athlete is responsible for managing their own pre-performance anxiety and a coach should not have to intervene	○	○	○	○	○

I feel an athlete who experiences pre-performance anxiety should be supported by their coach and offered strategies to help manage it	○	○	○	○	○
I feel that working with athletes on their mental skills is just as important as working on their physical skills	○	○	○	○	○

Page Break

Directions: Think about an athlete experiencing pre-performance anxiety. Check off the following signs and symptoms they may be likely to experience (select all that apply).

- [ ] Lack of confidence
- [ ] Drowsiness
- [ ] Decreased heart rate
- [ ] Negative self-talk
- [ ] Pacing
- [ ] Poor concentration
- [ ] Excitement
- [ ] Weight gain
- [ ] Avoiding eye contact
- [ ] Increased appetite
- [ ] Muscle Tension
- [ ] Indecision
- [ ] Withdrawal
- [ ] Decreased breathing rate
- [ ] Dizziness
- [ ] Fever

Please read the following scenario and select the option that best describes your view.
Scenario 1: Player X starts to experience pre-performance anxiety. Coach A decides to have a conversation with them about the symptoms they are having, how they feel they are being impacted by their symptoms, and if they are interested in any management strategies.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that Coach A made the right decision to have a conversation with Player X	○	○	○	○	○
Most coaches would feel that Coach A made the right decision to have a conversation with Player X.	○	○	○	○	○

Please read the following scenario and select the option that best describes your view.
Scenario 2: Player Y can often be found pacing before they begin warmup for a game. When approached, they avoid making eye contact and keep touching the back of their neck. Coach B does not approach Player Y, as they feel there is nothing they can do to help them.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that Player Y should be able to manage their pre-performance anxiety symptoms on their own.	○	○	○	○	○
Most coaches would feel that Player Y should be able to manage their pre-performance anxiety symptoms on their own	○	○	○	○	○

I feel that it would be beneficial for Coach B to suggest the strategy of cognitive restructuring or a pre-performance routine to Player Y to help manage their pre-performance anxiety	○	○	○	○	○
Most coaches would feel it would be beneficial for Coach B to suggest the strategy of cognitive restructuring or a pre-performance routine to Player Y to help manage their pre-performance anxiety	○	○	○	○	○

Please read the following scenario and select the option that best describes your view.
Scenario 3: Player Z tells Coach C they often utilize pre-performance rituals to control the pre-performance anxiety, engaging in habits such as eating the same meal at the same time of day, dressing from right to left, and wearing the same pair of lucky socks.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that Coach C should help Player Z develop more task-relevant game-day routines to help manage their anxiety.	○	○	○	○	○
Most coaches would feel that Coach C should play a role in helping Player Z develop more task-relevant game-day routines to help manage their anxiety.	○	○	○	○	○

Please read the following scenario and select the option that best describes your view.
Scenario 4: Athlete D suffers from pre-performance anxiety prior to games, however, they believe if they tell their coach they will be ignored and told to deal with it.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that Athlete D should disclose their struggle to their coach because they may be able to provide some resources and skills for managing it	○	○	○	○	○
Most coaches would feel that Athlete D should disclose their struggle to their coach, as they may	○	○	○	○	○

be able to provide resources and skills for managing it	

End of Block

Start of Block

Q46 After completing this survey, do you consent to continuing your participation in this research study?

- ○ Yes, I consent to participating
- ○ No, I do not consent to participating

End of Block

Start of Block

Q39 Thank you for completing this survey. You will receive an email in the next 48 hours outlining what the next steps are.

End of Block

Appendix E

Pre-Performance Anxiety Management Resources

Pre-performance anxiety (PPA) has been identified as a mental factor that can impact athletes' performance in sport, with 30-60% of athletes who voluntarily participate in sport reporting feelings of anxiety in relation to their performance. **Pre-performance anxiety is a negative emotional state that occurs before an athlete partakes in a sports event (e.g., game, practice) or task within sport (e.g., penalty shot, free kick).** Stress and anxiety are common in sport, as athletes must deal with standards for success, pressure from coaches, family, or media, and exposure to criticism. Because of the stress factors many athletes are exposed to, they are at a high risk of experiencing performance anxiety, which can lead to problems with motivation, performance, and confidence. However, there are strategies that coaches can use to help athletes manage their pre-performance anxiety symptoms, as they are designed to help athletes cope, manage symptoms of pre-performance anxiety, and support them if they experience it. Pre-performance anxiety can be interpreted differently by athletes depending on their experiences. For example, an athlete may feel anxious about their performance, but may also feel confident and positive about their abilities, which will help them to interpret their pre-performance anxiety as getting ready to perform. However, if an athlete lacks confidence or feels they lack ability, they may interpret their pre-performance anxiety as more harmful. Developing a pre-performance or pre-event plan which includes implementing strategies to help athletes manage pre-performance anxiety symptoms can be a more effective approach than trying to help an athlete after they experience pre-performance anxiety. Because pre-performance anxiety can impact an athlete both within sport and outside of it, offering skills and strategies to help manage their experience is very important.

Pre-performance anxiety is different from clinical anxiety. Pre-performance anxiety is related to a specific situation or environment (e.g., game, gym, penalty shot), only occurs within a certain situation or environment, and only lasts for the duration of the situation or time within the environment. Clinical anxiety is not triggered by a specific situation or environment. It can occur at seemingly random times, continue for long periods of time, produce extreme reactions, and be overwhelming for the individual. Recognizing these differences is important, as you may have to provide different kinds support to an athlete experiencing clinical anxiety. The information provided on this website is designed to address pre-performance anxiety and should not be used to manage clinical anxiety.

What can pre-performance anxiety impact?

- Sport performance
- Motivation
- Working memory
    - Working Memory is important for making decisions and maintaining attention and concentration
- Sense of control
    - Having a sense of control can help athletes manage their thoughts and feelings and feel capable of performing well.
- Confidence
- Well-being

What causes pre-performance anxiety?

- When an individual perceives the environment or something in their environment to be unique, threatening, or potentially harmful to their performance
- Unclear role on a team
    - Having a clear role within a team helps an athlete focus on their individual tasks and goals. If an athlete's role is unclear, they may feel anxious about what is expected of them and these feelings may impact their performance.
- Feeling unprepared
- High-stakes games
- Last-minute changes (e.g., location, time, lineup)
- Either internal and external pressures of a sport
    - For example, internal pressures may result from:
        - Pressure from the athlete themselves to perform well
        - Lack of self-confidence or commitment
        - Feelings of uncertainty or letting down oneself or others
    - For example, external pressures may result from:
        - Pressure from coaches, teammates, scouts, parents, or friends to do well
        - Spectators
        - The level of competition
        - The consequences of success or failure
        - The location
            - Athletes are more likely to experience pre-performance anxiety at away competitions

<u>Symptoms</u>

What are the symptoms of pre-performance anxiety? What should coaches be looking for?

While many symptoms of pre-performance anxiety show up in a way that are noticeable for coaches (e.g., defensiveness, repetitive movements), there are some symptoms that only the athlete would be aware of (e.g., increased heart rate, loss of sleep). Because of this, it is always a good idea to have check-ins scheduled with athletes so you can ask how the athlete is doing and ask if they are experiencing any symptoms of pre-performance anxiety that may not be apparent. Check out the infographic below that outlines the kinds of symptoms athletes may experience.

Can pre-performance anxiety be good?

Pre-performance anxiety can have both positive and negative effects on athletes. How the anxiety affects the athlete depends on how they interpret the symptoms they experience, as interpretations can be either facilitative (helpful) or debilitative (hurtful) to performance. Athletes that have a more facilitative perception of their anxiety symptoms view stressful situations as a challenge, are better able to use coping strategies, feel more confident, and often perform better. Athletes that have a more debilitative perception of their anxiety symptoms view stressful situations as threatening to performance, and often struggle to cope with their symptoms effectively. A good way to understand how the athletes you work with perceive their anxiety symptoms is by asking them.

Help Athletes Recognize and Reflect on their Pre-Performance Anxiety

To learn how to help athletes recognize and interpret their symptoms accurately, check out the *Symptom Interpretation Resource*.

To help athletes recognize and reflect on their symptoms of pre-performance anxiety, give them the *Pre-Performance Anxiety Worksheet for Athletes*, worksheet. This worksheet asks athletes about the symptoms of pre-performance anxiety they experience, how they perceive those symptoms, how they control or manage their symptoms, how they perform when experiencing symptoms, and how their symptoms make them feel. The worksheet will provide you with a better understanding of how each of your athletes experiences pre-performance anxiety and whether they interpret their symptoms in a helpful or hurtful way.

Depending on how your athlete(s) say they are affected by their symptoms, you can use the *Pre-Performance Anxiety Worksheet Guide for Coaches* to determine the appropriate resources and strategies to help them deal with pre-performance anxiety. Use this worksheet early in the season to start the discussion about how athletes feel before events, then you can use the strategies provided to help those who experience pre-performance anxiety to help them manage their symptoms closers to the event. We recommend utilizing strategies within a week of the event.

To learn how to help athletes manage their physical symptoms of pre-performance anxiety, check out the *Strategies for Managing Physical Symptoms* handout.

To help athletes learn how to cope with their physical symptoms of pre-performance anxiety, check out the *Acknowledge and Address Worksheet*.

Addressing Athletes Respectfully

How to address athletes appropriately and respectfully?

The most important thing to remember when addressing pre-performance anxiety in athletes is that their experiences are very real. Pre-performance anxiety can be harmful to performance, and impact both an individual's athletic identity and personal life. Coaches should acknowledge that what their athlete is feeling is very real and that performance anxiety can be managed with the right strategies, some patience, and of course, support from those around them. Check out our *Coach Self-Evaluation Worksheet* to reflect on your current strategies for interacting with athletes, and to get some helpful tips for doing so respectfully.

When to call in reinforcements?

If you notice an athlete is experiencing severe pre-performance anxiety and it's effecting multiple aspects of their life and personality, it may be time to call in some reinforcements. There are many options that you as a coach can provide to an athlete who is struggling, and providing these resources is just as supportive as trying to help them yourself.

We have provided some extra *Resources* you or your athlete(s) can reach out to. You can share the whole page with the athlete, or just offer the resources that may be appropriate.

Pre-Performance Anxiety Management Strategies

Below we provide three categories of strategies and skills that you can use to help your athlete(s) manage pre-performance anxiety. Each strategy has a summary and some information for you to familiarize yourself with, different ways to implement the strategy, and worksheets that can be passed out to athletes to help guide them and provide extra practice.

Self-Confidence Support Strategies

Success in sport boosts self-confidence, making it an important part of an athlete's experience. Self-confidence is an athlete's belief that they are capable of performing well, meeting challenges, and succeeding within their athletic environment. One of the symptoms of pre-performance anxiety is a lack of self-confidence, which often occurs when an athlete feels they aren't capable of handling a challenge or feel they can't succeed in the conditions they are performing in. A low sense of self-confidence can cause an athlete to feel less in control, have trouble coping with their worries, and struggle to make decisions, all of which contribute to feelings of pre-performance anxiety. Supporting athletes by helping them boost their confidence can be an effective way to reduce some of the negative effects of pre-performance anxiety and can help them to interpret things in their sporting environment more positively (e.g., seeing something as a challenge rather than an obstacle or stressor).

Now that you're familiar with self-confidence in sport and how it relates to pre-performance anxiety, you can try out some of the strategies that have been found to boost athletes' confidence. Below, we have provided three ways that you can help support your athlete(s) by fostering their confidence. We recommend starting with SMART goals, as it is the easiest strategy to implement and will start a conversation about what your athlete(s) hope to accomplish. We recommend giving these strategies to athletes to work on outside of game, practice, and training time. You can explain the strategy or run through it during a practice to make sure they have the right idea, but then ask them to practice the strategy on their own. This allows them to focus on themselves and reduce the amount of distractions or interruptions using found in a game/practice/training environment.

Setting Goals

When working with your athlete(s), it is important to help them goals. Long-term goals may not provide the same support as short-term goals – by creating goals, athletes can feel as though they have the ability to meet the goals they have set. When goals are achieved, athletes feel like they're getting more positive feedback, which helps to give them confidence in their abilities, and can help in the management of pre-performance anxiety. Review the *Goal Setting* page for more information, worksheets, and helpful infographics!

Imagery

Mental imagery, also called visualization, mental rehearsal, and mental practice is viewed by coaches and researchers as one of the most important psychological skills. It is considered a multidimensional process that refers to an experience that mimics a real experience. Researchers have reported that the more senses you include, the more realistic it is compared to the actual experience, which will result in greater benefits. Imagery can be used to help athletes develop or maintain a healthy sense of confidence, and the skill can be utilized in both team and individual settings. Motivational general-mastery imagery is the most appropriate kind of imagery when

targeting self-confidence. Motivational general-mastery imagery consists of thinking of images related to confidence, control, and mental toughness. Picturing yourself scoring the game-winning goal, succeeding at a skill, or outplaying your opponent are all examples of confidence-building motivational general-mastery imagery. Use the Mental Imagery Worksheets below to help athletes practice the skill of mental imagery. When developing the imagery scene, focus on picturing a scene in which the athlete overcomes a challenge, successfully completes a task, or wins a challenging competition/game. Scenes that revolve around these situations provide the best opportunity for the development and maintenance of self-confidence, which can help athletes struggling with pre-performance anxiety manage their symptoms. For a team imagery activity, check out *Mental Imagery Worksheet 1*. For an individual imagery activity, check out *Mental Imagery Worksheet 2*.

Redefine Success

Success in sport is often defined by winning outcomes, and while winning is certainly an important aspect of sport, there are many small victories between championships. When an athlete feels they have control over their ability to achieve success, their confidence will increase. Controllable sources of confidence are the parts of performance that the athlete has the ability to personally change, such as their intensity in practice, skill mastery, and motivation.

Uncontrollable sources of confidence are parts of performance that athletes may have no direct ability to change, such as the outcome of games or skill level of opponents. As much as coaches wish it was, winning is not a controllable factor of sport, so, to provide a controllable source of confidence, coaches must redefine their definition of success when working with athletes. How an athlete perceives their coaches' standard for success can have a big impact on their self-confidence. For example, if an athlete has lost their last three games and feels their coach only cares about how many wins they have, their self-confidence can severely decline, and symptoms of pre-performance anxiety can arise as a result. Creating an environment in which success is defined by technique, improvement, and effort can help athletes maintain their sense of confidence, as these are things athletes have the ability to control. For example, placing emphasis on a skill an athlete showed improvement on, or providing a cue for how they can improve a skill may help athletes recognize that success can come from sources other than winning. Use the *Redefining Success Worksheet for Coaches* to see how you can change your definition of success and provide confidence support to athletes struggling with pre-performance anxiety. Once you have found some factors you would like to use to define success, you should share them with your athlete(s). Below are a few ways to share this information with athletes:

- Have a meeting to discuss your expectations and ideas of what success looks like. If you want to turn this into a group activity, check out the *Success in Sport Activity Planner*
- Provide athletes and/or parents with a copy of our *Success in Sport Infographic for Athletes*, which can be emailed, printed, or hung up in a team space
- Incorporate your definition of success into your team or program's code of conduct
- Praise athletes when they achieve something that fits your definition of success (e.g., improving a skill, demonstrating resiliency)

Cognitive Restructuring Strategies

Anxiety is subjective, meaning that each athlete interprets feelings of anxiety in their own way. Sometimes anxious thoughts and feelings are positive, helping the athlete to feel prepared and ready to perform. But sometimes anxious thoughts and feelings are negative, holding an athlete back from performing at their best. Learning to recognize when an anxiety response is helpful versus harmful is an excellent skill that can help athletes label their feelings, alter negative perceptions, and better manage pre-performance anxiety. Cognitive restructuring is a strategy used by many individuals to take away the power of negative thoughts and feelings brought on by pre-performance anxiety. Cognitive restructuring asks athletes to reflect in order to recognize, challenge, and replace negative thought patterns with more positive thoughts and perceptions of anxiety. Negative thoughts often lead to negative feelings and negative self-perceptions, which can result in increased anxiety and poor performance.

Keep in mind that this strategy, while effective when implemented correctly, can take some time for athletes to master. Athletes must be willing to try this strategy, otherwise, they may find it frustrating due to the lack of immediate results. Learning to recognize thoughts that often fly through your head without question is a skill – one that takes time, practice, and trial and error. But once an athlete has mastered the skill, cognitive restructuring can help them to challenge their negative thoughts, alter their perceptions, and reduce the negative impacts of pre-performance anxiety. Check out the *Cognitive Restructuring Infographic* to get an idea of what cognitive restructuring looks like. The infographic outlines the steps involved in the strategy, provides examples at each step, and explains when cognitive restructuring can be used.

Cognitive Restructuring Worksheets

Below are some worksheets designed to guide athletes through the implementation of cognitive restructuring. We recommend giving these strategies to athletes to work on outside of game, practice, and training time. You can explain the strategy or run through it during a practice to make sure they have the right idea, but then ask them to practice the strategy on their own. This allows them to focus on themselves and reduce the amount of distractions or interruptions using found in a game/practice/training environment.

- The *Cognitive Restructuring for Beginners Worksheet* can be used to walk you through the steps of cognitive restructuring or given to athletes for them to complete. The worksheet outlines the ABCD technique often used when first starting to try out cognitive restructuring, asking athletes to identify a moment of adversity and then walking them through the steps of addressing and altering the negative thoughts and feelings they have in that situation.
- The *Thought Adjustment Worksheet* can be used to help you better understand the process of cognitive restructuring, or it can be given to athletes for them to complete. The worksheet asks athletes to identify a stressor in their athletic environment, reflect on the thoughts and emotions they have as a result of the stressor, and create alternative thoughts and feelings to help them manage any negative pre-performance anxiety symptoms that are brought on by the stressor.
- You can use the *If-Then Worksheet* to help athletes identify realistic outcomes of their actions. This worksheet can be given to athletes for them to complete. When an athlete experiences pre-performance anxiety, they may feel the quality of their performance will have severe negative outcomes (e.g., if I have a bad game today I will definitely be

kicked off the team). It is important to help athletes address and alter these thoughts and feelings, because these negative assumptions can actually cause an athlete to feel more anxious. If an athlete seems to be particularly occupied with the consequences of a negative performance, this worksheet may be helpful!

- The *Thought Adjustment Cues Worksheet* can be used to walk you through the steps of cognitive restructuring or given to athletes for them to complete. Cues can be helpful tools when helping athletes manage their feelings of pre-performance anxiety. This worksheet asks athletes to identify when they feeling anxious and then pick something in that situation to act as a cue to start thinking more helpful, positive thoughts.

Performance Routines

Performance routines are individualized, systematically implemented tasks that an athlete develops and partakes in prior to a game, practice, specialized task (e.g., free throw, penalty shot), or training session. There are two kinds of performance routines: pre-event routines and pre-performance routines. Pre-event routines occur prior to an event, game, practice, or training session. Pre-performance routines occur prior to a specific skill or action. For example, completing a series of stretches before a game would be considered a pre-event routine. Visualizing a successful free throw prior to executing it would be considered a pre-performance routine. Performance routines offer many potential benefits to athletes, as they may improve concentration and consistency, aid in anxiety management, lessen negative thoughts, and improve overall performance, especially in beginner athletes. If you want to work with your athlete(s) to designed a performance routine, check out *Performance Routines Worksheet 1* and *Performance Routines Worksheet 2*.

Performance routines are used by athletes for many reasons, because they can help with anxiety management, concentration, consistency, and overall performance. When used to help manage pre-performance anxiety, these routines can help athletes reduce the negative impact of anxiety symptoms and help them to feel more prepared or *in the zone* prior to an event or performance. When developing a performance routine, it is important for the athlete to select elements of their routine that they have control over so they are able to adapt to any situation and complete their routine. This sense of control can help reduce the negative feelings associated with pre-performance anxiety by providing structure and attainable goals for the athlete to focus on prior to a performance. An athlete has control over an element of their routine when they are able to influence it themselves. Stretching in the same order, napping before the game, and visualizing a successful free throw would all be examples of controllable elements of a routine. Stretching in the example same place, napping at the exact same time, and having to make seven successful free throws would all be examples of non-controllable elements of a routine. Check out the *Performance Routine Examples Infographic* for some examples of tasks that can be incorporated into a performance routine.

Superstitions are often confused with performance routines. Superstitions are repetitive actions not relevant to technical performance that an athlete may feel the desire to act out prior to a sporting event. If an athlete is unable to complete their full routine of superstitious actions prior to performance, it can be extremely problematic, as their confidence in their ability, focus, and overall performance can be impacted. Examples of superstitions include always dressing in the same order prior to a game, having to eat the same meal at the same time every game day, and

always having to sit in the same spot on the bus. These actions are not relevant to an athlete's performance, as they do not prepare them physically or mentally to perform. Often if an athlete is unable to complete a superstitious behaviour, they feel as though their performance will be severely impacted or something bad will happen (e.g., injury, missed penalty shot). On the other hand, performance routines are designed to be relevant to the task and help to prepare the athlete physically or mentally to perform. Engaging in a stretching routine before every game, visualizing the start of the race, and doing a breathing exercise before your performance are all examples elements of a performance routine. Check out the *Routine vs. Superstition Infographic* for more examples of what is considered a healthy routine versus what is considered a harmful superstition.

Performance Routine Worksheets

Below are some worksheets designed to guide athletes through the development and implementation of performance routines! We recommend giving these strategies to athletes to work on outside of game, practice, and training time. You can explain the strategy or run through it during a practice to make sure they have the right idea, but then ask them to practice the strategy on their own. This allows them to focus on themselves and reduce the amount of distractions or interruptions using found in a game/practice/training environment.

- **The** *Performance Cues Strategy* resource was designed for coaches to help provide insight into how cues can be incorporated into an athlete's performance routine. It explains how cues can be helpful and provides some examples of cues that can be used in different situations. We recommend looking at this resource before sharing the strategy with your athlete(s), as it will help you get an idea of what an effective cue looks like and how to make sure there is purpose behind it. Once you have a good idea of this strategy, check out the worksheet below!
- The *Performance Cues for Athletes Worksheet* is designed to be given to athletes for them to complete. It explains why cues can be helpful when incorporated into pre-performance routines, and asks athletes to develop a few cues of their own, and reflect on how they may help – this helps athletes develop cues that are purposeful and task-relevant. The worksheet also provides some examples of cues used in certain situations and how they may help.

What's Next?

There are many strategies you can use to help manage pre-performance anxiety. Now that you have had the opportunity to learn about them and try them out, it's time to reflect on how it went. Did you find them helpful? Which one did you like the most? Which one didn't work for you? Reflecting is a big part of mastering sport psychology skills – to figure out what works best for you, you must reflect on how each strategy made you feel and whether it did what it was meant to do. Use the *Strategy Check-in Worksheet* to reflect on your experience using these new strategies and figure out which ones you want to continue using in the future. This worksheet was designed to be used by both coaches and athletes. You can have your athletes complete the worksheet to reflect on the strategies they found helpful when they tried to manage their pre-performance anxiety, or you can complete it yourself and reflect on how the strategies fit within your coaching practice!

Symptom Interpretation Resource

- Pre-performance anxiety can have both positive and negative effects on athletes. How the anxiety affects the athlete depends on how they interpret the symptoms they experience, as interpretations can be either facilitative (helpful) or debilitative (hurtful) to performance.

- Athletes that have a more facilitative perception of their anxiety symptoms view stressful situations as a challenge, are better able to use coping strategies, feel more confident, and often perform better. Athletes that have a more debilitative perception of their anxiety symptoms view stressful situations as threatening to performance, and often struggle to cope with their symptoms effectively.

- Due to the nature of pre-performance anxiety symptoms, it can be challenging to separate feelings of anxiety from appropriate feelings of anticipation prior to a sporting event. Things like an increased heart rate, increased breathing rate, butterflies, and muscle tension can all be signs of both readiness to perform and pre-performance anxiety. This can be a problem if an athlete is interpreting these things inaccurately. For example, if an athlete interprets their increased heart rate as a sign of anxiety, they may become nervous, get clammy hands, and struggle to perform at their best. However, increased heart rate is a normal symptom of warming up and getting ready for a game/practice/session. When interpreted correctly, this symptom may actually help an athlete feel more ready to perform.

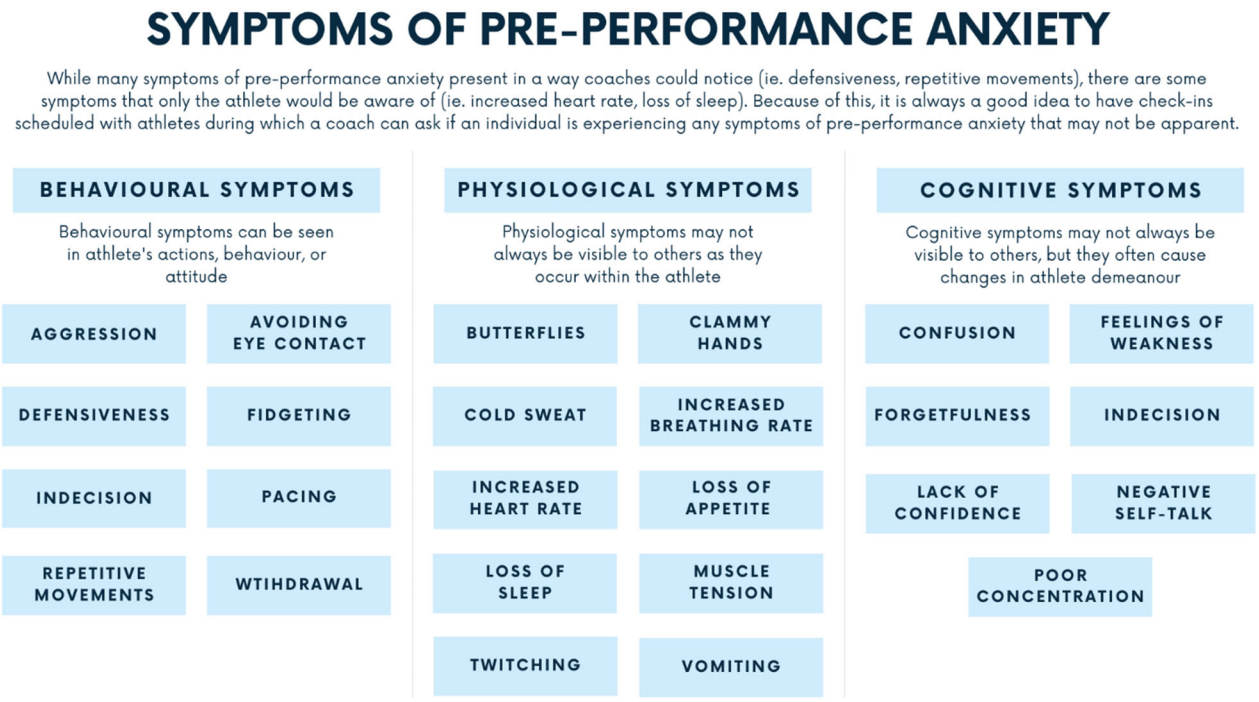
- As a coach, the best way to determine whether the athlete is showing signs of pre-performance anxiety or just getting amped up to perform is to talk to them – ask them how they're feeling about the game/task/event, what they hope to accomplish, and if they have any concerns. If they express they're feeling nervous, hope to just get through the game, or are concerned about their place on the team, this may indicate that they are in fact experiencing pre-performance anxiety. But if they are excited for the game, are striving to score a goal, and don't vocalize any major concerns, they may just be experiencing the anticipation feelings that accompany preparing for a game/task/event.

- If an athlete expresses concern over a symptom that may just be a result of preparation for performance, you can help them alter their interpretation of the symptom by providing a simple explanation for why they are feeling the way they are. Below is a chart that offers some explanations for why an athlete may be experiencing symptoms of pre-performance anxiety, without actually being anxious.

- The next page provides some examples of pre-performance anxiety symptoms that are often interpreted incorrectly, and how you can help your athlete(s) change their attitude toward the symptom.

Symptom	Possible explanation for why athlete is experiencing symptom	What can you say?	What can the athlete do?
Increased heart rate	Heart rate naturally increases when you begin to warm-up, it's a sign of physical readiness and helps maximize performance	*"Having an increased heart rate is a normal part of sport. It shows that you've warmed up sufficiently and your body is ready"*	*Stop what they're doing, take a moment, and recognize that their heart rate goes down once they have stopped moving*
Increased breathing rate	Breathing rate naturally increases when you begin to warm-up, it's a sign of physical readiness and helps maximize performance	*"Having an increased breathing rate is a normal part of sport. Your body needs more oxygen when you move more, so you'll be breathing faster than usual"*	*Practice a short breathing exercise. For example inhale for 4 seconds, hold the breath for 7 second, exhale for 8 seconds. Do this 10 times.*
Butterflies	Butterflies can arise from anticipation of an event or action, they help the body get ready to act and keep us alert so we perform better	*"Butterflies mean you are anticipating your next move. They help you feel ready to jump into action and stay focused"*	*Acknowledge what they are feeling. For example, saying or thinking "I am feeling butterflies because I am anticipating the game/event/task" may help to label the feeling in more helpful way*
Clammy Hands	Clammy hands can occur as a result of anticipatory excitement or simply from warming up and sweating	*"Because you're moving around and getting ready, your body is trying to regulate its temperature. This may cause your hands to get a little bit clammy"*	Take a moment to stop what they're doing and cool down, have a sip of cold water (cold hydration can help regulate body temperature), wipe their hands on a spare towel or jersey
Withdrawal	Withdrawal can occur when an athlete gets really focused or dialed in prior to a game/event. A very social athlete may become more withdrawn prior to a big game/event in order to get psychologically ready	*"When you get focused and block out distractions you are mentally preparing to perform and directing all your attention to the task at hand"*	*Reflect on their withdrawal. Do they find it helps them get in the right zone to perform? Or do they too dialed in and miss cues from their coaches and teammates. If they get too dialed it, they should engage in a brief conversation with a coach, trainer, or teammate to re-center themselves*

Pre-Performance Anxiety Symptom Infographic



Pre-Performance Anxiety Worksheet for Athletes

Pre-performance anxiety is an intensified mental and/or physical state that occurs before an athlete participates in a sports event (e.g., game, practice) or task within sport (e.g., penalty shot, free kick). It is common for an athlete to feel pre-game jitters or nerves, but sometimes those feelings can become too much to manage, and you can feel overwhelmed. This worksheet asks you to reflect on your experiences with PPA. You will indicate which symptoms you experience, any strategies you may have for managing PPA, and how you feel your performance is impacted by PPA.

What sport situation(s) do you associate with pre-performance anxiety?

_____

_____

_____

Section A: Some symptoms of pre-performance anxiety are listed below. Please check all the symptoms you feel apply to you on a typical day. Next to each symptom you check, please circle how you feel about the symptom; does it help you get ready to perform, or does it make you feel anxious to perform?

Symptom	✓	Ready to perform	Anxious to perform
Muscle Tension		Ready to perform	Anxious to perform
Negative Self-Talk		Ready to perform	Anxious to perform
Increased Heart Rate		Ready to perform	Anxious to perform
Increased Breathing Rate		Ready to perform	Anxious to perform
Indecision		Ready to perform	Anxious to perform
Poor concentration		Ready to perform	Anxious to perform
Twitching		Ready to perform	Anxious to perform
Defensiveness		Ready to perform	Anxious to perform
Pacing		Ready to perform	Anxious to perform
Butterflies		Ready to perform	Anxious to perform
Cold Sweat		Ready to perform	Anxious to perform
Forgetfulness		Ready to perform	Anxious to perform
Loss of Sleep		Ready to perform	Anxious to perform
Repetitive Movements		Ready to perform	Anxious to perform
Lack of Confidence		Ready to perform	Anxious to perform
Confusion		Ready to perform	Anxious to perform
Avoiding Eye Contact		Ready to perform	Anxious to perform
Aggression		Ready to perform	Anxious to perform
Vomiting		Ready to perform	Anxious to perform
Loss of appetite		Ready to perform	Anxious to perform
Feelings of weakness		Ready to perform	Anxious to perform
Frustration		Ready to perform	Anxious to perform
Clammy hands		Ready to perform	Anxious to perform
Fidgeting		Ready to perform	Anxious to perform

Section B: Do you have any strategies for managing or controlling your feelings of pre-performance anxiety? Please list any strategies you use or have used to try and manage feelings of pre-performance anxiety. The first box has an example for you to get an idea of how to fill in the table. You do not have to fill all the provided spaces – you may not have any strategies yet and that's okay!

Strategy
When I feel myself getting anxious before a game I always stop what I am doing and take three big deep breaths

Section C: If/when you experience feelings of pre-performance anxiety, how do you feel your performance is impacted?

_____

_____

_____

_____

_____

Section D: How does pre-performance anxiety impact you? Please check all the things you feel are impacted when you experience pre-performance anxiety, and circle whether they are positively or negatively impacted. If you find there is an item not impacted, leave that section blank.

	✓	Positively Impacted	Negatively Impacted
Confidence		+	-
Motivation		+	-
Concentration/Attention		+	-
Performance		+	-
Desire to Succeed		+	-
Relationship with teammate(s)		+	-
Relationship with coach(es)		+	-
Thoughts about yourself		+	-
Thoughts about others		+	-
Stress Level		+	-

When you have completed the worksheet, return it to your coach (if you are comfortable doing so). This will allow them to help you determine the appropriate strategies you can use to manage your symptoms of pre-performance anxiety.

Pre-Performance Anxiety Worksheet Guide for Coaches

Please read through your athlete's responses and take note of how each athlete interprets their anxiety symptoms.

In *Section A*, you can see their interpretations of each symptom of pre-performance anxiety they experience. If an athlete indicates that they feel positively (ready to perform) about most of their symptoms, they may not need support or strategies to help them cope. If this is the case, reassure the athlete that they are interpreting their pre-performance anxiety symptoms well and that they may not need to learn coping strategies, but they could if they're interested. If an athlete indicates that they feel negatively about most of their symptoms, it may be best to offer extra support and some strategies for pre-performance anxiety management.

Section B provides insight into the strategies your athletes are aware of. This section tells you whether your athletes have tried to manage their pre-performance anxiety before and how they have tried to address it. If an athlete indicates they have not tried any strategies, you can suggest some strategies that may help them manage their symptoms. If they have tried a strategy in the past, but didn't find it effective, it doesn't mean they should skip that strategy. Perhaps they weren't using the strategy effectively or it has been a while since they last tried it and the strategy may be more helpful now.

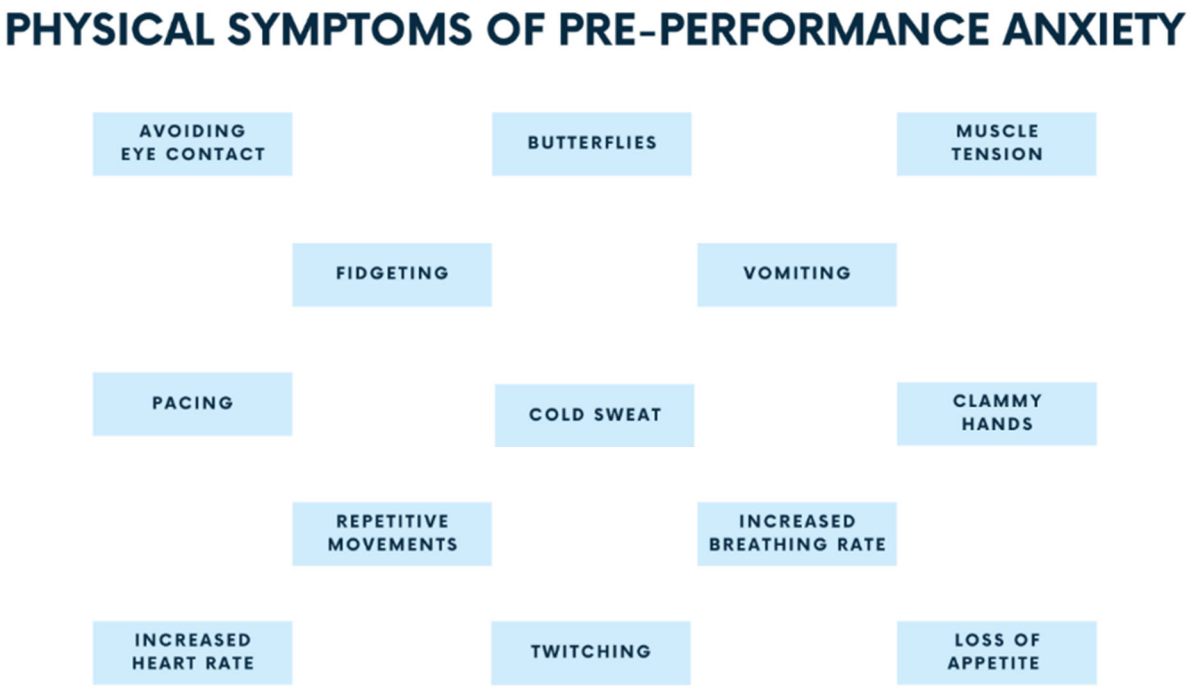
Section C provides insight into how athletes feel their performance is impacted by their experiences with pre-performance anxiety. This may help you to better understand your athlete's performance and explain why there may be inconsistencies.

Section D allows you to get a big-picture idea of what areas athletes feel are negatively affected. See below to find the resources on the website that correspond to each impacted area. Some strategies are listed for more than one area of impact, as they can be applied in multiple situations!

Confidence	Pre-Performance Anxiety, Goal Setting, Imagery
Motivation	Performance Routines, Anxiety Regulation, Goal Setting, Self Talk, Imagery
Concentration/Attention	Performance Routines, Concentration, Biofeedback
Performance	Performance Routines, Pre-Performance Anxiety, Goal Setting, Athlete Roles, Anxiety Regulation, Imagery, Concentration
Relationship with teammate(s)	Group Cohesion and Team Building
Relationship with coach(es)	Athlete Roles
Thoughts about yourself	Athlete Roles, Pre-Performance Anxiety, Self Talk, Goal Setting
Stress Level	Anxiety Regulation, Pre-Performance Anxiety, Athlete Roles, Biofeedback

Strategies For Managing Physical Symptoms

Although performance anxiety is often thought of as a mostly mental experience, the physical symptoms of pre-performance anxiety can be equally as harmful to an athlete's performance. Providing strategies directed towards both mental and physical symptoms of pre-performance anxiety will give your athlete(s) the best chance to effectively manage their symptoms and perform their best. Below are some of the most common physical symptoms of pre-performance anxiety that athletes may experience, and some strategies that may help to manage them. We recommend giving these strategies to athletes to work on outside of game, practice, and training time. You can explain the strategy or run through it during a practice to make sure they have the right idea, but then ask them to practice the strategy on their own. This allows them to focus on themselves and reduce the amount of distractions or interruptions using found in a game/practice/training environment.



Meditation

Meditation is a form of mental training that encourages mindfulness, concentration, and anxiety management in athletes. A brief meditation session can help an athlete take inventory of their thoughts, acknowledge how they are feeling, and provide the space to address any thoughts or feelings contributing to their sense of pre-performance anxiety. This may help to address symptoms such as muscle tension, fidgeting, pacing, repetitive movements, increased heart rate, twitching, increased breathing rate, and butterflies. Below is an example of a brief body scan meditation exercise that you can share with athletes to help them learn how to manage their physical pre-performance anxiety symptoms. We recommend giving these strategies to athletes to work on outside of game, practice, and training time. You can explain the strategy or run

through it during a practice to make sure they have the right idea, but then ask them to practice the strategy on their own. This allows them to focus on themselves and reduce the amount of distractions or interruptions using found in a game/practice/training environment.
Once athlete(s) have practiced this exercise few times, they should be able to conduct a body scan exercise without the guidance of the script.

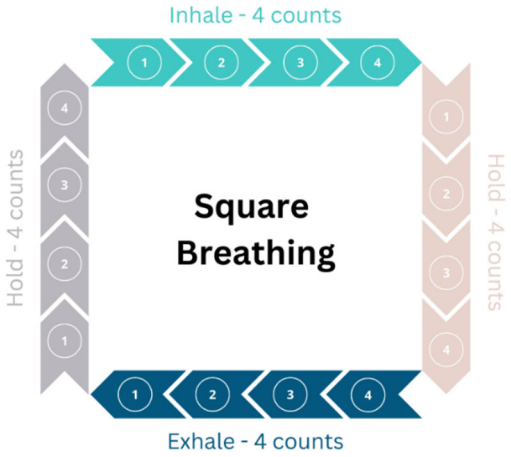
Body Scan Meditation Exercise Script
"Find a quiet place to sit or lay down and get into a comfortable position. Close your eyes (if you are comfortable) and clear your mind of all thoughts about the upcoming game/event/practice. Focus on the sensations of your body in your environment. Feel your feet or back touching the floor, feel your lungs expanding and your chest rising with each breath.
You will begin the body scan by starting at the top of your head and focusing on the sensations you feel there. Feel the weight of your head, the tenseness of your forehead, the muscles in your face. Are they relaxed? Are they tensed? Try to relax any muscle you find to be tense.
Then move on to your neck and focus on the sensations there. Is it tense? Relaxed? Then move on to your shoulders. Focus on the sensations you feel there. Feel where your shoulders are touching the back of the chair or the floor. Continue scanning down either arm and focus on any sensations you feel as you go. Flex your right arm for a few seconds and then slowly relax the muscles there. Now flex your left arm and then slowly relax the muscles there.
Then focus on your chest. Can you feel it rising and falling with each breath? Can you feel your ribs expanding and contracting? Can you feel your heartbeat in your chest? Can you slow your heartbeat down at all? Take a few deep breaths while focusing on this area. Try to make them as smooth as possible.
Then move on to your legs. Feel the weight of your legs pressing into the chair or the ground. Focus on the sensations you feel, are your muscles tense or relaxed? Flex your right leg for a few seconds and then slowly relax the muscles there. Now, flex your left leg for a few seconds and then slowly relax the muscles there.
Now turn your attention to your ankles and feet. Feel the weight of your feet pressing into the ground. Focus on the sensations you feel there. Are your muscles tense or relaxed? Flex your right foot for a few seconds and then slowly relax the muscles there. Now, flex your left foot for a few seconds and then slowly relax the muscles there.
Now broaden your focus to your whole body. Are any muscles still tensed? If so, take a moment and focus on relaxing them. Feel your whole body and the weight of it as it presses into the chair or the floor. Take a few deep breaths.
You can begin to stand up whenever you are ready. Please be mindful of those around you as you begin to move."

Breathing Exercises
Breathing exercises can be very similar to some forms of meditation. Focusing on breathing can help an athlete ground themselves within their body and recalibrate their thoughts. While breathing exercises may appear simple, they can be very effective in helping an athlete focus, settle their thoughts, and manage any physical symptoms of pre-performance anxiety they may be experiencing. This may help to address symptoms such as muscle tension, fidgeting, pacing, repetitive movements, increased heart rate, twitching, increased breathing rate, and butterflies. We've provided two examples of breathing exercises below. We recommend giving these strategies to athletes to work on outside of game, practice, and training time. You can explain the

strategy or run through it during a practice to make sure they have the right idea, but then ask them to practice the strategy on their own. This allows them to focus on themselves and reduce the amount of distractions or interruptions using found in a game/practice/training environment.

Square Breathing

The idea of square breathing is to bring attention to one's breathing pattern and focus on evening it out to reduce any harmful thoughts or sensations an individual may have as a result of performance anxiety. Focusing on breathing in this way can help to distract the mind and calm down the nervous system, which will help in the management of many physical symptoms of pre-performance anxiety. Square breathing is quite easy to do – inhale for 4 counts, hold for 4 counts, exhale for 4 counts, hold for 4 counts. Repeat this sequence for about a minute.

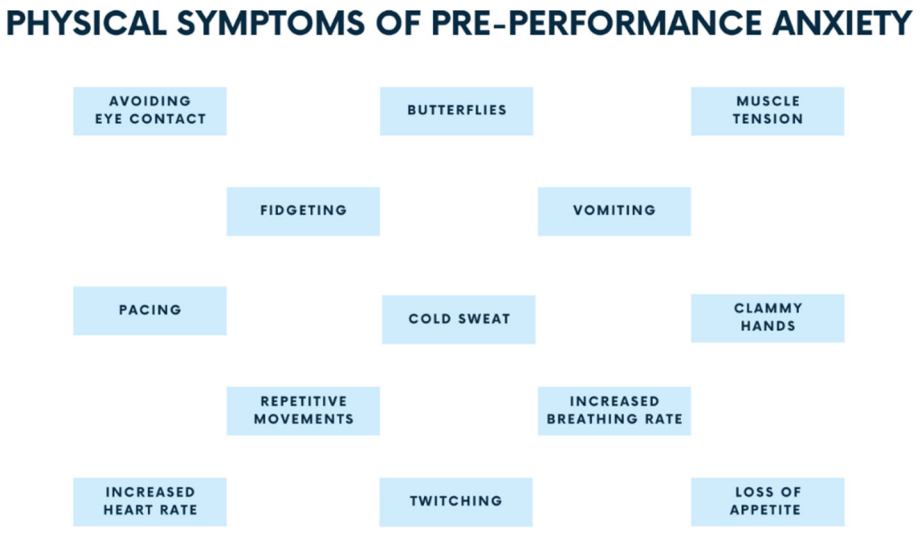


10 breaths with long exhales

This may be the simplest strategy we offer, but it can be very effective in helping athletes re-center themselves and manage their physical symptoms of pre-performance anxiety. Lengthening the exhale of a breath can help to calm down the nervous system, which aids in the management of some if the physical symptoms of pre-performance anxiety (e.g., muscle tension, fidgeting, increased heart rate, increased breathing rate). This exercise requires athletes to take 10 controlled breaths, focusing on making the exhale longer than the inhale. While this can take some practice – it is a strange feeling at first – it's very easy to do in any situation. We recommend introducing this exercise in a practice setting so athletes can get used to it before trying it in game situations.

Acknowledge and Address Worksheet

Symptoms of pre-performance anxiety can be both mental and physical. This worksheet will help you focus on any physical symptoms you may be feeling, acknowledge why they are happening, and hopefully help you to cope with them. Think of a physical symptom of pre-performance anxiety you experience (we've provided a list of potential symptoms below for some examples), then follow the worksheet below to reflect on your experience with this symptom and learn how to acknowledge and address it. We have provided some examples of how to fill in the worksheet. If you experience more than one physical symptom – which is very common – use the multiple lines provided to complete the worksheet for all your symptoms. This worksheet is designed to guide you through an exercise that can be done in your head before a sporting event if you begin to experience a symptom.



What physical symptom(s) of pre-performance anxiety do you experience most often?

"Muscle Tension."

How does the symptom make you *feel*? (e.g., Do you breathe quicker? Does your heart beat faster? Do your hands get sweaty?)

"I feel tense and stiff, like no amount of warming up will get me ready to play"

Label what you are feeling. (Is it anxiety? Nervousness? Excitement?)

"When my muscles get tense, it is because I am nervous to play. I want to perform well"

Acknowledge the feeling! You are allowed to feel the way you feel, so tell yourself it's ok to feel anxious/nervous/excited/etc.

"*It's ok to feel anxious about the game, it's the championship so it's normal to be so nervous."*

Address the symptom. Take deep, slow breaths and focus inward on the symptom. How can you help manage the symptom right now?

"I will close my eyes and do some extra stretching, while also being mindful of my breathing."

Redirect your thoughts. What are you excited for? What part of the game/practice/etc you are looking forward to? What is one thing you hope to accomplish this game/practice/etc?

"I am excited for the game to start because I'm in the starting lineup for the first time. I'm hoping to score a goal this game."

Now that you have practiced this strategy, try to use it next time you experience a physical symptom of pre-performance anxiety. Run through this exercise in our head (or out loud) before a game, tournament, penalty shot, or any other situation you may feel anxious about!

Coach Self-Evaluation Worksheet

All coaches have different ways of interacting with their athlete(s). Interactions can vary by athlete, situation, or mindset, however, it's important to remember that addressing athletes respectfully is essential to a healthy working relationship between a coach and their athlete(s). Follow the prompts below to reflect on how you currently work with your athlete(s) who may be experiencing pre-performance anxiety.

If you have an athlete experiencing pre-performance anxiety, what do you currently do to support them?

_____

_____

_____

_____

_____

How do you think coaches should respond to a situation where an athlete is experiencing pre-performance anxiety?

_____

_____

_____

_____

_____

How can you ensure that you are addressing your athlete(s) respectfully when they are experiencing pre-performance anxiety? (You can list things you're mindful of, statements you use, etc.)

_____

_____

_____

_____

_____

Now that you've reflected on how you interact with your athletes experiencing pre-performance anxiety, you may be happy with how you're managing it, or you may be wondering how you can improve. No matter where you're at, we have provided some helpful tips to help you navigate how to address your athlete(s) while supporting them.

Working with young athletes

- Younger athletes may be at an increased risk of experiencing pre-performance anxiety, as they can have a greater sense of insecurity and less coping strategies for dealing with the pressures of sport. Younger athletes can have the same big anxiety feelings as older athletes, so it's important to acknowledge when this happens. When talking to younger athletes, make sure you are giving them time to talk – you can do this by asking open-ended questions (e.g., How are you feeling about the game today? What do you think you did well today?). Open-ended questions provide young athletes with the opportunity to expand on their thoughts and feelings. This can be applied to older athletes too; open-ended questions are your friend! Often people elaborate more in-depth when given the space to.
    - Close-ended questions often provide little space to expand and may provide answers within the question itself. For example, if you asked a young athlete "Are you feeling excited about the game today?" they may latch on to the option you game them within the question – *excited* – when in fact they are feeling stressed or anxious.
- It's important when working with young athletes to communicate with their parents/guardians. Some parents/guardians may prefer to address pre-performance anxiety concerns themselves. If you find a youth is displaying symptoms of pre-performance anxiety, try reaching out to their parents/guardians first. Explain that you can provide support to the youth, but if they would like to be involved (or handle it themselves) that is also an option.
    - When opening communication with parents in this capacity, explain the situation, what you think may be happening, and some strategies or skills that may help manage pre-performance anxiety, that way they can decide how involved they would like to be.
    - Three-way communication between youth athletes, coaches, and parents/guardians can provide a strong support network to an athlete experiencing pre-performance anxiety and offer them many outlets to discuss their thoughts and feelings. You can also provide parents with the link to this website (*sportpsychologyforcoaches.ca*)!

Speaking to athletes

- Telling an athlete to "calm down" or "get over it" is not an effective way to help them cope with pre-performance anxiety. Coaches must be supportive of their athletes by offering explanations of why pre-performance anxiety happens and how normal it is to feel the way they do, and by providing strategies for coping with any symptoms they may have.
- If an athlete performs poorly, a coach should not focus solely on their mistakes and should not call them out in front of colleagues, competitors, or spectators.
    - Sometimes an athlete or team may need some constructive criticism – that's a part of both individual and team sports. Coaches are often the people to offer this, but choosing the appropriate time and context is important. It's a good idea to ask your athlete(s) to reflect shortly after their performance on what they did well and possible areas of improvement. You can also make small error corrections throughout a game or event (e.g., corrections between shifts or plays) to help keep them on track.

Pre-game/event talks

- When giving a pre-game/event talk, it can be challenging to recognize what is helpful versus what is harmful. While past failures can be discussed, it is best to do so in a constructive manner – label past issues as learning points to help athletes recognize what happened previously and what they need to do differently to avoid a repeat performance.

- When giving a pre-event talk, try to focus only on the current situation. Tell the athlete(s) why you think they can succeed, why they are prepared for the moment, and what they can take away from it – win or lose. Or you can ask the athlete(s) what they feel success looks like for them that day.
    - Expressing the numerous ways an athlete or team can succeed within the event (check out the Redefining Success Infographic) can also be beneficial, as it can provide short-term, attainable goals that may help to boost confidence.

Returning from injury

- Athletes returning from injury are at a heightened risk of experiencing pre-performance anxiety. Fear of reinjury and readiness to perform again contribute to this. Athletes returning from injury may require extra support and acknowledgement, as well as more frequent check-ins.
    - Check-ins are important as they can help a coach recognize if the player is ready to perform or if the injury is still a factor, and because check-ins can serve as positive reinforcement for the athlete. When an athlete has to vocalize "Yes, I'm okay!", they may begin to feel more relaxed and internalize the belief that they are ready to perform again.

When implementing sport psychology

- Effectively using skills and strategies for managing pre-performance anxiety can take time and practice. If an athlete says that they are still experiencing negative symptoms of pre-performance anxiety, coaches should acknowledge that it's normal for this to occur. Remind them that it takes time to develop the physical skills related to sport, so it makes sense that it takes time to develop the mental skills too!

Individual Athletes and Specialized Positions

- Individual athletes and athletes in specialized positions (e.g., goalie, kicker, pitcher) are at a greater risk of experiencing pre-performance anxiety than team athletes. This may be because they compete alone or have different responsibilities than others on the team, which can lead to loneliness, a lack of support, and increased pressure.

When to call in reinforcements?

- If you notice an athlete is experiencing severe pre-performance anxiety and it's effecting multiple aspects of their life and personality, it may be time to call in some reinforcements. There are many options that you as a coach can provide to an athlete who is struggling, and providing these resources is just as supportive as trying to help them yourself.
    - We have provided some extra *Resources* you or your athlete(s) can reach out to. You can share the whole page with the athlete, or just offer the resources that may be appropriate.

Resources

Canadian Centre for Mental Health and Sport

Website: https://www.ccmhs-ccsms.ca/

Call: 833-462-2647

Self-referral form: www.ccmhs-ccsms.ca/self-referral-form

Refer someone else: www.ccmhs-ccsms.ca/ally-referral-form

Canadian Sport Psychology Association

https://www.cspa-acps.com/links

Canada Sport Helpline

Call or Text: 1-888-837-7678

Email: infor@abuse-free-sport.ca

Kids Help Phone (also serving adults)

Text: Text "CONNECT" to 686868

Chat: https://kidshelpphone.ca/live-chat/

Youthspace

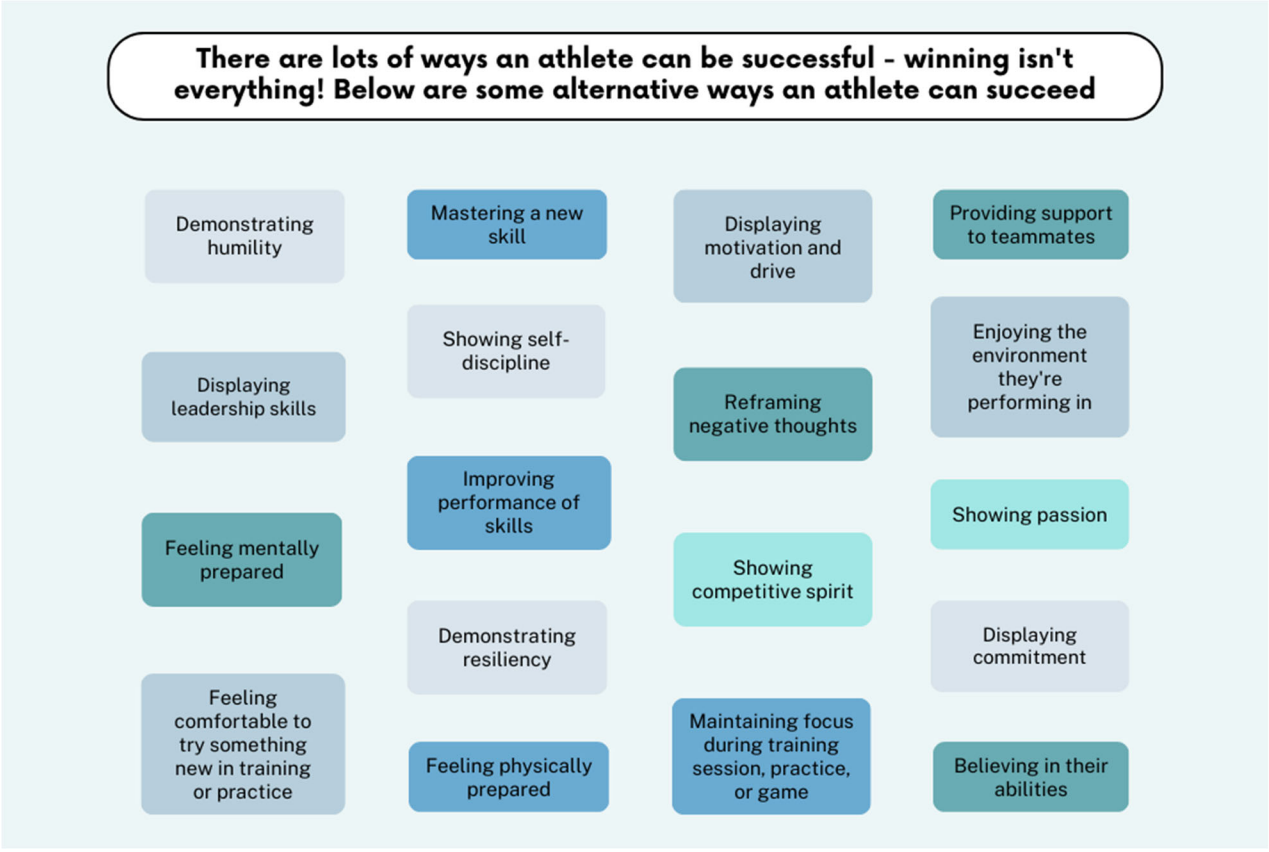
Text: 778-783-0177

Chat: www.youthspace.ca

Redefining Success Worksheet for Coaches

Success in sport is often defined by winning outcomes, and while winning is certainly an important aspect of sport, there are many small victories between championships. When an athlete feels they have control over their ability to achieve success, their confidence will increase. Controllable sources of confidence are the parts of performance that the athlete has the ability to personally change, such as their intensity in practice, skill mastery, and motivation. Uncontrollable sources of confidence are parts of performance that athletes may have no direct ability to change, such as the outcome of games or skill level of opponents. As much as coaches wish it was, winning is not a controllable factor of sport, so, to provide a controllable source of confidence, coaches must redefine their definition of success when working with athletes.

How an athlete perceives their coaches' standard for success can have a big impact on their self-confidence (Machida et al., 2012). For example, if an athlete has lost their last three games and feels their coach only cares about how many wins they have, their self-confidence can severely decline, and symptoms of pre-performance anxiety can arise as a result. Creating an environment in which success is defined by technique, improvement, and effort can help athletes maintain their sense of confidence, as these are things athletes have the ability to control. Below are some of the alternative ways success in sport can be defined.



Once you have found some factors you would like to use to define success, you should share them with your athlete(s). Below are a few ways to share this information with athletes:

- Have a meeting to discuss your expectations and ideas of what success looks like. If you want to turn this into a group activity, check out the *Success in Sport Activity Planner*
- Provide athletes and/or parents with a copy of our *Success in Sport Infographic for Athletes*, which can be emailed, printed, or hung up in a team space
- Incorporate your definition of success into your team or program's code of conduct
- Praise athletes when they achieve something that fits your definition of success (e.g., improving a skill, demonstrating resiliency)

How do you plan to share your definition of success with your athlete(s)?

_____

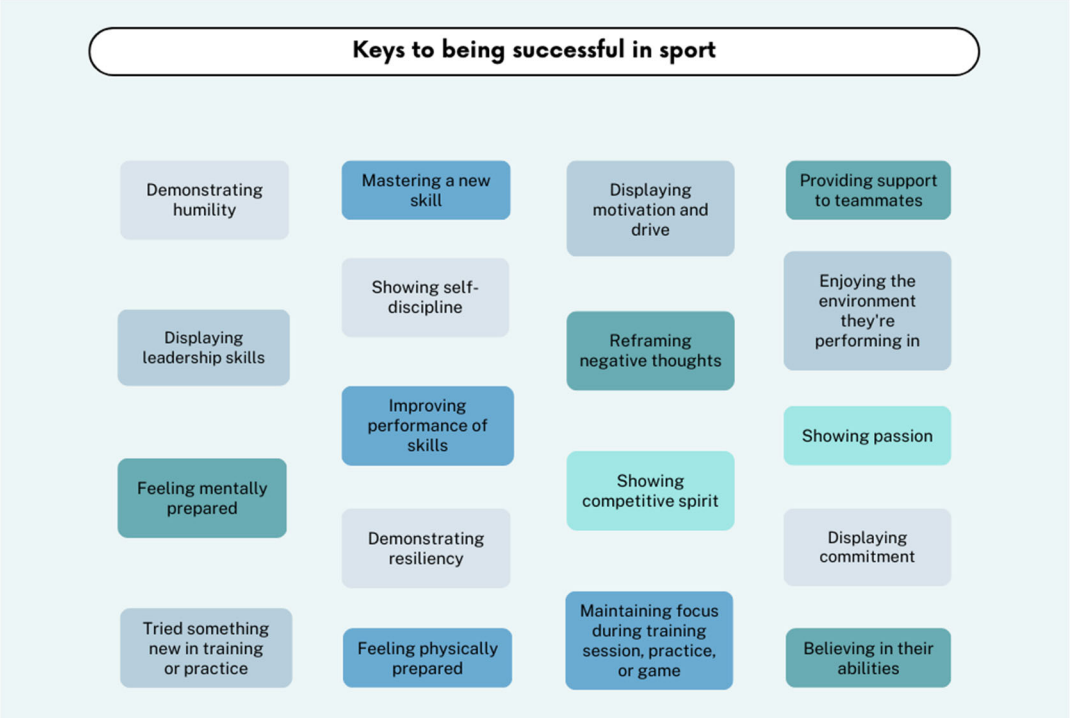
_____

_____

_____

Success in Sport Activity Planner

Success in sport is often defined by winning outcomes, and while winning is certainly an important aspect of sport, there are many small victories between championships. Creating an environment in which success is defined by technique, improvement, and effort can help athletes maintain their sense of confidence, as these are things athletes have the ability to control. Below is the *Success in Sport Infographic for Athletes* which provides some of the alternative ways success in sport can be defined.



Allowing your athlete(s) to get involved in the definition of success you create helps you better understand what they think success looks like and ensures the culture you create as a coach is relevant and achievable for your athlete(s). To do this, you can use 15 minutes of practice time to meet with your athlete(s) and discuss what success looks like for them. *We recommend not providing the infographic above to your athlete(s) until after they have come up with some ideas of their own – this provides space for them to really think about what success is to them and be creative in their ideas*. Have your athlete(s) shout out their ideas, write them on a whiteboard, or write them on a piece of paper that you can collect. Below is a space where you can write down some of the ideas they come up with:

Once your athlete(s) have provided some examples, share some of your own! If there is some overlap in what you say and what your athlete(s) said, that's great – this means you share ideas about what success in sport looks like. After you have discussed some of your own ideas, work with your athletes to choose some core qualities of success that you will work with throughout the season. Again, have your athlete(s) shout out answers, write them on a whiteboard or a piece of paper. Below is a space where you can write down the core qualities you settled on to define success:

_____

_____

_____

_____

Once you have defined the core qualities you and your athlete(s) want to move forward with, it's a good idea to set a schedule for check-ins to ask your athlete(s) what their successes were since the last check-in. These check-ins can be done as a team, or with individual athletes. For example, you may decide that once a week you want to meet with your athlete(s) to discuss some of the successes they had over the last week of play. Or you may decide to meet with your athlete(s) once a month to go over the things they feel they succeeded at throughout the last month. If you work with a team, we encourage a group check-in where you discuss with the team how they feel they have succeeded, and also individual check-ins with each athlete on the team – this is because each athlete may have a different idea of what personal success looks like for them. The frequency of check-ins is entirely up to you. Below is a space where you can write down what you want your check-ins to look like:

When? (e.g., before practice, after practice, after a game, during training, etc)	
How often? (e.g., once a week, twice a week, once a month, etc)	
How? (e.g., individual conversation, group conversation, teamsnap chat, etc)	

Cognitive Restructuring Infographic

Thought Adjustment Worksheet

A stressor is an environmental or personal pressure an athlete experiences that impacts their ability to cope emotionally or physically with the circumstances. Using cognitive restructuring techniques, stressors can be acknowledged, processed, and rationalized, which can help athletes manage their feelings resulting from the stressor. Utilizing this strategy can help to ease the feelings of pre-performance anxiety an athlete may experience.

Fill out the table below with a stressor you have experienced in your sporting environment prior to performing and work through the table to follow the steps of cognitive restructuring. This table is a practice guide for beginners, however, as you become more familiar with the steps you may find you can work through them without the table and apply them in real time. If you find yourself rating your alternative thought as not very believable, create a new alternative thought while making sure you are thinking realistically about what you can do in your situation.

1. Stressor	*Describe the stressor clearly and concisely*	
2. Negative Automatic Thoughts	*What thoughts do you have about the stressor? Rate the believability of these thoughts from 0%-100%.*	
3. Emotions	*What are you feeling? Rate the intensity of these emotions from 0%-100%.*	
4. Alternative Thoughts	*What is a more positive thought you could have about this stressor? Rate the believability of these thoughts from 0%-100%.*	
5. Alternative Emotions	*How might you feel after having the alternative thought? Rate the intensity of these emotions from 0%-100%.*	

If-Then Worksheet

When faced with anxiety-provoking situations or circumstances prior to performance, athletes may catastrophize. Catastrophizing is the amplifying of an issue or assuming the worst possible outcome will occur. For example, an individual may think "If I don't score a goal today, then I will be kicked off the team in no time" or "If I don't perform this floor routine perfectly, I will really disappoint my coach." Thoughts like this can lead to anxiety, but often these thoughts warrant no concern as the worst-case scenario an athlete thinks of is not usually the most likely outcome. Cognitive restructuring can help athletes recognize when they're catastrophizing and guide them in altering their patterns of thought to be more helpful. Below is an activity that can help athletes identify more realistic outcomes.

The goal of this activity is to turn a negative thought into a helpful thought that can challenge the athlete, help them grow, and reduce anxiety over the consequences of a situation. *If, then* statements are a good way to break down athletes' concerns so they can see their negative thinking patterns and alter them. You can find some examples of if, then statements provided in the table below.

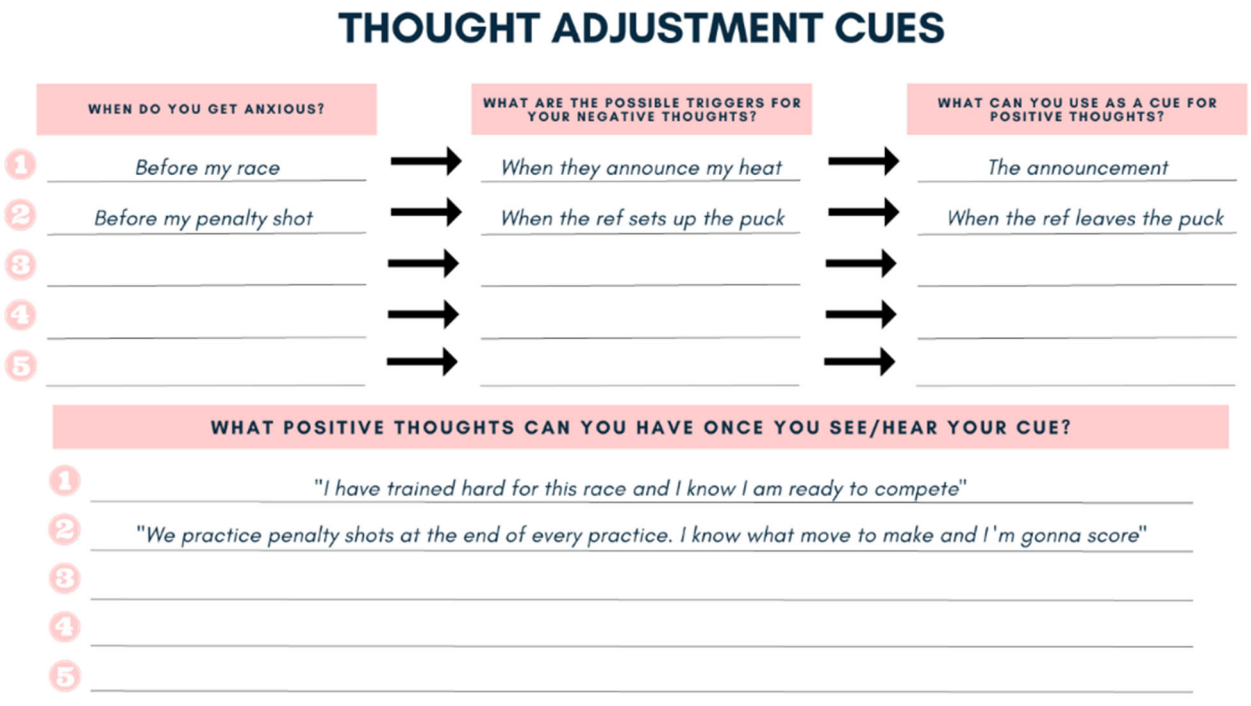
Before		**After**	
If…	**…Then**	**If…**	**…Then**
If I don't score a goal today…	*…Then I will be kicked off the team in no time*	*If I don't score a goal today…*	*…Then I will work hard on my shooting accuracy next practice*
If I try a new skill in practice…	*…Then my teammates will laugh at me*	*If I try a new skill at practice…*	*…Then I will show my teammates I am trying to develop and I will be adding to my skillset*

Thought Adjustment Cues Worksheet

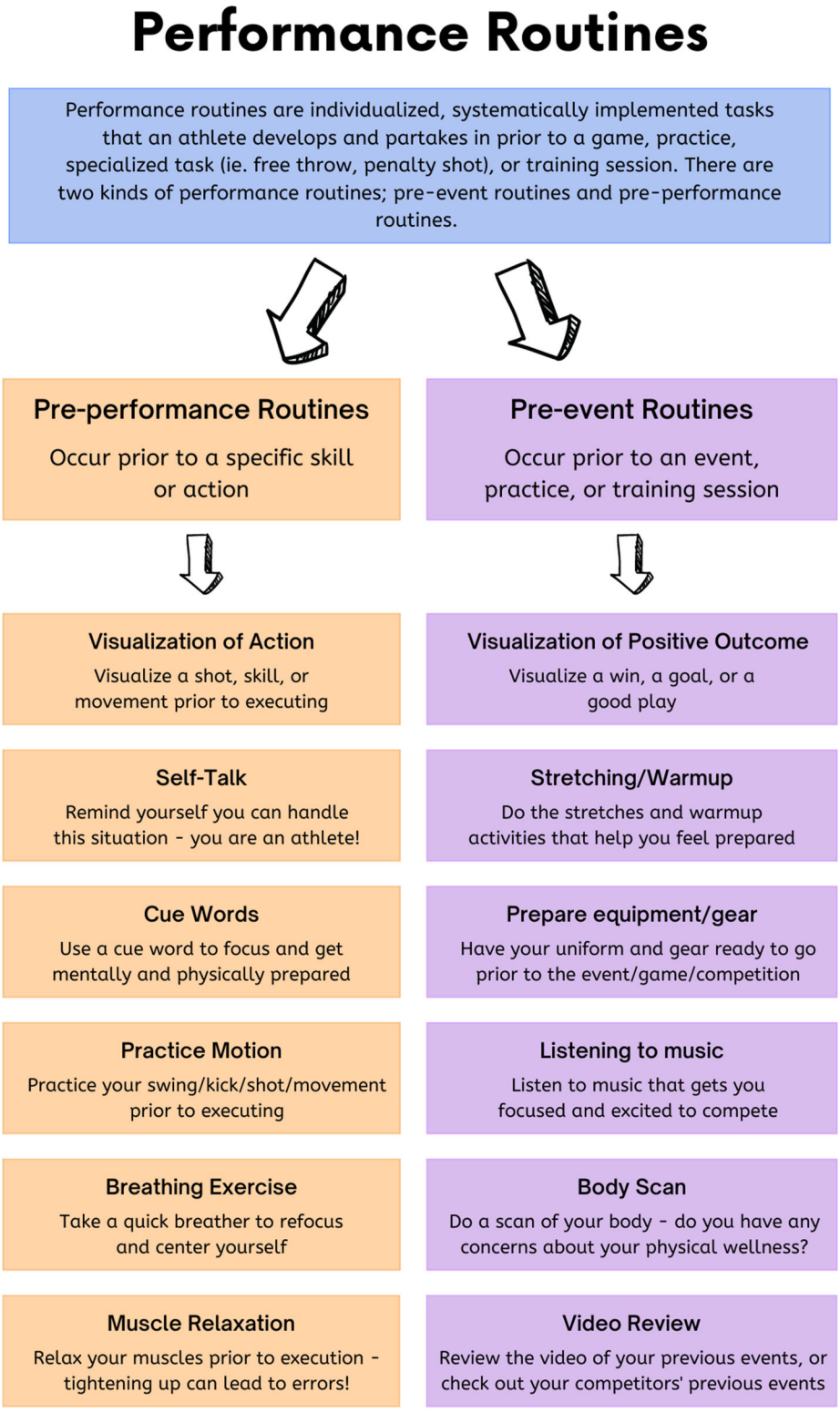
Cognitive restructuring is a strategy used by many individuals to take away the power of negative thoughts and feelings brought on by pre-performance anxiety. Cognitive restructuring asks athletes to reflect in order to recognize, challenge, and replace negative thought patterns with more positive thoughts and perceptions of anxiety. Negative thoughts often lead to negative feelings and negative self-perceptions, which can result in increased anxiety and poor performance. Keep in mind that this strategy, while effective when implemented correctly, can take some time to master. You must be willing to try this strategy, otherwise, they may find it frustrating due to the lack of immediate results.

Learning to recognize the thoughts that fly through your head is a skill - one that takes time, practice, and trial and error. It can be challenging at first to recognize negative thoughts, as they can be brief; occurring very quickly before a game, practice, or task. To help recognize these thoughts, it's important to reflect on your experience within your athletic environment and determine exactly what triggers your negative thoughts. What kick-starts your anxiety and self-doubt? Is it the announcement that your race is about to start? The kick-off whistle? The pre-game pep talk? Skating to centre ice for a penalty shot? Anything can be a trigger for negative thoughts, but learning to recognize the triggers that bring up these feelings allows you to adjust your thoughts and focus on your performance. Once you identify the triggers for your negative thoughts, you can use them as cues to adjust your thoughts before they get gloomy.

For example, a rugby player recognizes that they begin to get anxious when setting the ball on the tee before they kick. By reflecting on this, they may decide that the tee will act as a cue to think positive thoughts – this will help to prevent the negative thoughts from taking over and impacting their performance. Follow the prompts on the infographic below to reflect on what your triggers might be and to work through developing a cue for more positive thoughts:



Performance Routine Examples Infographic



Routine vs Superstition Infographic

Performance Cues Strategy

Cues are words or short phrases an athlete can think or say aloud while preparing to perform a skill or movement. Cues can be used as a pre-performance routine to help an athlete trigger the appropriate mindset or action, as they can help with attention focusing, distraction elimination, anxiety management, and mental and physical preparation. Cues are used to help an athlete concentrate on only the information relevant to the task at hand – sometimes referred to as *locking* in - which can lead to improved performance and increased confidence.

Cues are words or phrases thought or spoken immediately before performing a task (e.g., free throw, penalty shot, dive). They can be any task-relevant word or phrase the athlete chooses, most often they are instructional or motivational in nature. Below are some examples of cue words and phrases, and situations in which an athlete may use them. These can be helpful when guiding an athlete in the development of a cue. To be effective, cues must be paired with an action and practiced. If an athlete develops a cue word to help reduce anxiety prior to performing a free throw in a game, they should use the same cue word when practicing. Incorporating the cue in all situations is important as the more often it is used, the better the cue can help trigger the appropriate mindset and movement.

Cue Word	**Situation**
"Up"	Receiving a serve in volleyball
"Fast"	Racing to beat an opponent to the puck
"Smooth"	Entering the water on a dive
"Light feet"	Preparing to jump the first hurdle
"Deep breath"	Preparing to take a free throw

While pairing a cue word with an action of movement seems easy enough, it is important to make sure there is a purpose behind the cue. Use the *Cues for Athletes Worksheet* to help with cue development, it can be shared with athletes to walk them through the process. It asks athletes to think of a situation in a practice, game, or training session in which they feel anxious or struggle to focus. They will then develop an appropriate cue word or phrase, and then explain the purpose behind the cue (e.g., "before I take a penalty shot, I get anxious and start to overthink the movement. Having a cue word will help me manage my anxiety so I can stay focused on my shot").

Performance Cues for Athletes Worksheet

Cues are words or short phrases an athlete can think or say aloud while preparing to perform a skill or movement. Cues can be used as a pre-performance routine to help an athlete trigger the appropriate mindset or action, as they can help with attention focusing, distraction elimination, anxiety management, and mental and physical preparation. Cues are used to help an athlete attend to only the information relevant to the task at hand – sometimes referred to as *locking* in - which can lead to improved performance and increased confidence.

Cues are thought or spoken immediately before performing a task (e.g., free throw, penalty shot, dive). They can be any task-relevant word or phrase the athlete chooses, most often they are instructional or motivational in nature. Below are some examples of cue words and phrases, and situations in which an athlete may use them. These can be helpful when guiding an athlete in the development of a cue. To be effective, cues must be paired with an action and practiced. If an athlete develops a cue word to help reduce anxiety before performing a free throw in a game, they should use the same cue word when practicing. Incorporating the cue in all situations is important as the more often it is used, the better the cue can help trigger the appropriate mindset and movement.

On the next page is a table that will guide you through cue development. There are some examples of cues words available to get you thinking. First, think of a situation in your sport during which you feel anxious, have trouble focusing, or start overthinking. Then think of a cue to tie to that situation (examples can be seen below). Once you've created a cue, explain how you believe it will help you in the sport situation you identified.

Situation	**Cue Word**	**How will it help?**
Receiving a serve in volleyball	*"Up"*	This cue will help me not overthink how I receive the ball, as long as I get it up, we will be able to set up a play
Entering the water on a dive	*"Smooth"*	This cue will remind me to keep my form as I enter the water
Preparing to take a free throw	*"Deep breath"*	This cue will help me center myself and remain loose before I take my shot

Strategy Check-in Worksheet

There are many strategies you can use to help manage pre-performance anxiety. Now that you have had the opportunity to learn about them and try them out, it's time to reflect on how it went. Did you find them helpful? Which one did you like the most? Which one didn't work for you? Reflecting is a big part of mastering sport psychology skills – to figure out what works best for you, you have to reflect on how each strategy made you feel and whether it did what it was meant to do.

Below is a chart that asks to outline the strategies you used. For each strategy you can then explain what you hoped to accomplish by using it, when you tried it and how many times, what you liked about it, what you didn't like about it, and whether or not you feel it was effective in helping you manage feelings of pre-performance anxiety. Once you have filled it out, you can keep it for yourself to remind you of the strategies you liked, or you can share it with your coach so they can help you alter the strategies that may not have helped the way you wanted them to.

Strategy	
What did you hope to accomplish when using this strategy?	
When did you try it and how many times?	
What did you like about this strategy?	
What did you not like about this strategy?	
Did it help you manage feelings of pre-performance anxiety?	

Appendix F

Resource Navigation Guide

Pre-Performance Anxiety

A GUIDE TO USING THE RESOURCES

HOW TO BEGIN

We have provided a wide variety of resources to help you learn about pre-performance anxiety and the skills and strategies that can be used to help manage it. Remember that you can work through material at your own pace, there is no need to try and get through everything at once. Some concepts and strategies may be entirely new and take some time to understand before you can use them comfortably and integrate them into your practices.

This guide was created to help you navigate through the material in a way that is efficient, logical, and appropriate to your coaching practice. It will help you determine where to start, how to proceed through the material, when strategies can be used, and how to adapt the information to various situations.

"Pre-performance anxiety" is a bit of a mouthful. To make things easier, we refer to it as PPA throughout this guide and the resources.

PRE-PERFORMANCE ANXIETY → PPA

WHERE TO START

We suggest starting on the main page of the Pre-Performance Anxiety section of the website. This page provides an extensive overview of what pre-performance anxiety is, how it impacts athletes, common causes, and why it is important as a coach to address when an athlete is experiencing symptoms. This section is designed to help you familiarize yourself with the topic and gain a deep understanding of pre-performance anxiety within the scope of sport psychology.

SYMPTOMS

After you've read the overview of pre-performance anxiety, we recommend looking at the symptoms that can occur when an athlete experiences it. This will help to give you an idea of how they feel, how they're impacted, and why support can be important.

1. Read the brief summary under the header "Symptoms." This summary explains what the symptoms are and what coaches can be looking for.

2. Check out the PPA Infographic. It breaks down the variety of symptoms an athlete may have when experiencing PPA.

Not all symptoms are visible - but just because you can't see a symptom, doesn't mean your athlete is unaffected!

3. Once you've familiarized yourself with what PPA is and how it shows up, we recommend moving on to the Symptom Interpretation Resource linked on the PPA main page.

SYMPTOM INTERPRETATION RESOURCE

This resource was designed **for coaches** to help you understand how PPA can be both helpful and harmful to an athlete. There is also a helpful chart that provides examples of how to help an athlete correctly interpret their symptoms!

PPA symptoms can be both facilitative and debilitative

FACILITATIVE = HELPFUL	DEBILITATIVE = HARMFUL

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4. If your athletes experience physical symptoms of PPA, check out the Strategies for Managing Physical Symptoms resource or the Acknowledge and Address Worksheet.

STRATEGIES FOR MANAGING PHYSICAL SYMPTOMS

This resource is designed **for coaches** to provide you with three different exercises that can be used to help athletes manage their physical symptoms of pre-performance anxiety. We recommend giving these strategies to athletes to work on outside of game, practice, and training time.

5 Once you have taken a look through the symptom resources, you are ready use the Pre-Performance Anxiety Worksheet for Athletes. This worksheet was designed to be printed and **given to athletes** to complete. It can be used with athletes in both team and individual sports. We recommend distributing this worksheet prior to utilizing any of the strategies we provide to help manage PPA, as it will help you get an idea of which strategies may be most effective for which athletes. We recommend giving these strategies to athletes to work on outside of game, practice, and training time. You can explain the strategy or run through it during a practice to make sure they have the right idea, but then ask them to practice the strategy on their own.

PPA WORKSHEET FOR ATHLETES

This worksheet asks athletes to reflect on their experiences with PPA. They will indicate which symptoms they experience, any strategies they may have for managing PPA, and how they feel their performance is impacted by PPA. Distribute this worksheet to athletes in a practice setting. You can set aside 15-20 minutes to allow them to complete it, or you can let them take it home to complete. This worksheet is designed to be **returned to the coach upon completion** (if the athlete is comfortable doing so) to provide insight into the symptoms your athletes experience and how they are impacted by PPA.

Once your athletes have completed and returned the PPA Worksheet for Athletes, use the PPA Worksheet Guide for Coaches to learn how to interpret their answers and best support them in their management of PPA. This resource explains what each section of answers tells you, and what your next steps may be to address any concerns your athlete(s) may have expressed.

6 ADDRESSING ATHLETES RESPECTFULLY

When working with athletes of any age, in any sport, and at any level of competition, it's important to remember that they are human. Addressing your athlete(s) with respect will help you maintain a strong connection with them and ensure they feel supported. It can be easy to get caught up in your own feelings as a coach, but creating an environment with constructive and healthy communication will produce more positive results and help both you and your athlete(s) reach your goals.

We recommend all coaches read through the Addressing Athletes Respectfully section.

If you want to reflect on how you currently interact with athletes experiencing PPA, check out the Coach Self-Evaluation Worksheet. This resource was designed for **coaches**. We also looked at some errors coaches often make and provided some tips for handling situations you may encounter where these errors are common.

When should you call in reinforcements?

Sometimes providing support to your athlete(s) means helping them find somebody else who can provide a different kind of support. If you notice an athlete is experiencing extreme PPA and it's effecting multiple aspects of their life and their personality or they share feelings that go beyond sport, it may be time to call in some reinforcements. By doing this you are supporting your athlete the best way you can.

We provide some Resources you can share with your athlete(s) if you feel they need support from an external source. This page is available to print or email for easy sharing.

SELF-CONFIDENCE SUPPORT

When starting to look into self-confidence support strategies, we suggest you read through the brief summary of what they entail and why they may help an athlete manage PPA. We have outlined three different ways you can help an athlete build their self-confidence, each with their own subset of resources and worksheets you can use.

1. **Setting SMART Goals**
SMART goals are designed to help an athlete feel accomplished and in control, which helps to build confidence. Check out the SMART Goals Infographic to get a better idea of what SMART goals entail

2. **Imagery**
Imagery can be used to help athletes build confidence and manage their experience with PPA. Check out Mental Imagery Worksheet 1 for a team imagery activity, or Mental Imagery Worksheet 2 for an individual imagery activity.

3. **Redefining Success**
Redefining what success means for your athlete(s) can be hard as it requires you to challenge the common definition of success in the sport - winning. But providing alternative ways for athletes to succeed can help build their confidence and by extension, improve their performance. Check out the Redefining Success Worksheet for Coaches, Redefining Success in Sport Infographic for Athletes, and Success in Sport Activity Planner for more information on how to apply this strategy and for resources to provide to athletes.

COGNITIVE RESTRUCTURING

When starting to look at the cognitive restructuring strategies, we suggest you read through the brief summary of what they entail and why they may help an athlete manage PPA. We recommend having a good understanding of the concept and walking through it yourself before passing it on to your athlete(s), as this will help you answer any questions they may have. Because this is the most complex strategy to apply, we have provided five resources for you to utilize.

Before you share any worksheets or infographics with your athlete(s), we recommend you give a brief overview of PPA, the strategy your sharing, and why you're using it. If an athlete doesn't know the purpose, they will be less likely to complete the worksheet or use the strategy.

1. Cognitive Restructuring Infographic
This resource was designed to help explain the process of cognitive restructuring and provide examples at each step of the process. The infographic was designed for **both coaches and athletes** to use. You can print it and share it with your athlete(s), display it in a team space (i.e., locker room, coaching office), or share it with other members of the coaching staff.

2. Cognitive Restructuring for Beginners Worksheet
This resource was designed to guide you through the steps of cognitive restructuring and provide guidance as you apply the strategy. It can be used to walk **coaches** through the strategy, and be printed and distributed to **athletes** to help them work through it.

3 Thought Adjustment Worksheet
This resource was designed to help athletes recognize and acknowledge negative thoughts they may have, and then challenge them. This worksheet can be used to walk **coaches** through the strategy, and it can be printed and distributed to **athletes** to help them work through it.

Cognitive restructuring sounds like an intimidating strategy, but it really just means paying closer attention to automatic thoughts, reflecting on them, and then creating more constructive thoughts to take their place.

4 If, Then Worksheet
This resource was designed to help athletes recognize and acknowledge irrational thoughts. This worksheet can be used to walk **coaches** through the strategy, and it can be printed and distributed to **athletes** to help them work through it.

5 Thought Adjustment Cues Worksheet
This resource was designed to help athletes recognize their PPA thinking patterns, create cues to manage their thoughts, and foster more positive thinking patterns. This worksheet can be used to walk **coaches** through the strategy, and it can be printed and distributed to **athletes** to help them work through it.

PERFORMANCE ROUTINES

When starting to look into performance routine strategies, we suggest you read through the brief summary of what they entail and why they may help an athlete manage PPA. There are many misconceptions about what performance routines are. The resources we've provided thoroughly outline what a performance routine is - and what it isn't. To help you learn how performance routines can be developed and how they can help with PPA, we have provided six resources for you to utilize.

1. Performance Routines Worksheet 1
This resource was designed to walk athletes through the process of developing a performance routine by asking them to create a timeline of tasks they want to complete prior to the event. The worksheet also provides an example of what a timeline can look like. It can be used to walk **coaches** through the process, and it can be printed and distributed to **athletes** to help them work through it.

2. Performance Routines Worksheet 2
This resource was designed to walk athletes through the process of developing a performance routine. The worksheet breaks down how strategies can differ when they are designed for use with a single skill versus when they are designed for use throughout an event. It can be used to walk **coaches** through the process, and it can be printed and distributed to **athletes** to help them work through it.

3. Performance Cues Strategy
This resource was designed to help **coaches** understand how cues are developed. This worksheet can be used to walk **coaches** through the strategy, and it provides some examples for coaches to share with their athlete(s).

4 Performance Cues for Athletes Worksheet

This resource was designed to help athletes develop cues to pair with their actions within sport. This worksheet can be used to walk **coaches** through the strategy, and it can be printed and distributed to **athletes** to help them work through it.

PRE-PERFORMANCE ROUTINE: OCCURS PRIOR TO A SPECIFIC SKILL OR ACTION WITHIN A SPORTING EVENT (I.E., KICK, PASS, SHOT)

PRE-EVENT ROUTINE: OCCURS PRIOR TO AN EVENT, GAME, PRACTICE OR TRAINING SESSION

5 Routine vs. Superstition Infographic

This resource was designed to help explain the different between a performance routine and a superstition, providing examples of each for comparison. The infographic was designed for **both coaches and athletes** to use. You can print it and share it with your athlete(s), display it in a team space (i.e., locker room, coaching office), or share it with other members of the coaching staff.

6 Performance Routine Examples Infographic

This resource was designed to provide examples of common pre-performance and pre-event routines. The infographic was designed for **both coaches and athletes to use**. You can print it and share it with your athlete(s), display it in a team space (i.e., locker room, coaching office), or share it with other members of the coaching staff.

WHAT NEXT?

We have provided a lot of information about PPA, ways to address it, and how you as a coach can help your athletes develop skills and strategies to manage their experiences with PPA. Now that you've had the opportunity to learn and try things out, what's next?

Reflecting is a big part of mastering sport psychology skills. It allows you to figure out what works for you, what doesn't, and what you want to change moving forward. If you don't reflect, you don't learn from your experiences.

We have provided a Strategy Check-in Worksheet designed to help athletes and coaches reflect on their experiences using sport psychology skills and strategies to manage PPA. While the worksheet is designed to be distributed to **athletes**, coaches can also use it to reflect on their experiences with the new tools you've acquired (if you are using this worksheet as a coach, you do not have to fill in the last box).

If your athletes are comfortable, you can collect the worksheet upon completion to get an idea of what worked and what didn't for each individual. This will help you strengthen your coaching practice and support your athletes in the most effective way moving forward. If your athletes are not comfortable sharing the completed worksheet with you, that's totally fine too - the reflection is mostly for their benefit!

Appendix G

Survey 2E/3C

Please enter your full name

_____

Please provide your email address

_____

End of Block

Start of Block

Please answer the following questions about the extent to which you intend to use the pre-performance anxiety resources provided by the Sport Psychology for Coaches Website

	Definitely Not	Probably Not	Possibly	Very Probably	Definitely
I plan to use pre-performance anxiety **information and strategies** from the Sport Psychology for Coaches website with my athletes in the next month	○	○	○	○	○
I plan to utilize pre-performance anxiety **worksheets** from the Sport Psychology for Coaches website	○	○	○	○	○

in the next month	
I will use all aspects of the pre-performance anxiety **skills and strategies** from the Sport Psychology for Coaches website with my athletes in the next month	○ ○ ○ ○ ○

The following statements concern your current feelings about the implementation of pre-performance anxiety information in your coaching practice. Please indicate how true each of the following statements is for you in your current coaching situation.

	Completely Untrue		Moderately True		Completely True
I feel a sense of choice and freedom in how I implement pre-performance anxiety information in my coaching practice	○	○	○	○	○
I feel that using pre-performance anxiety information reflects what I am trying to accomplish in my coaching practice	○	○	○	○	○
I feel that choosing to use pre-performance anxiety strategies aligns with my	○	○	○	○	○

coaching methodology					
I feel I am able to effectively navigate information about pre-performance anxiety management	○	○	○	○	○
I feel like “I have to” incorporate pre-performance anxiety information in my coaching practice	○	○	○	○	○
I feel forced to use pre-performance anxiety strategies I wouldn’t choose to try	○	○	○	○	○
I feel I am unable to effectively navigate information about pre-performance anxiety management	○	○	○	○	○
Incorporating pre-performance anxiety information and strategies into my coaching practice feels like an obligation	○	○	○	○	○
I feel confident that I can effectively teach pre-performance anxiety strategies in my coaching practice	○	○	○	○	○

I feel capable of implementing pre-performance anxiety strategies into my coaching practice	○	○	○	○	○
I feel competent when navigating information about pre-performance anxiety management	○	○	○	○	○
I feel I can successfully implement difficult pre-performance anxiety management strategies in my coaching practice	○	○	○	○	○
I have serious doubts about whether I can use pre-performance anxiety management strategies in my coaching practice	○	○	○	○	○
I feel disappointed with my previous efforts of incorporating pre-performance anxiety information into practice	○	○	○	○	○

I do not feel competent when navigating information about pre-performance anxiety management	○	○	○	○	○
I feel like a failure when I struggle to integrate pre-performance anxiety management skills and strategies into my coaching practice	○	○	○	○	○

End of Block

Start of Block

Please read the following statements and select TRUE or FALSE for each question.

	True	False	Not Sure
Pre-performance anxiety impacts only 10% of athletes (Pre-performance anxiety: heightened mental and/or physiological arousal that occurs before an athlete partakes in a sports event or action within sport)	○	○	○

Developing a pre-performance or pre-event plan for managing pre-performance anxiety symptoms is less effective than developing a plan after an athlete experiences symptoms	○	○	○
Anxiety symptoms can be helpful or harmful to an athlete's performance	○	○	○
An athlete's well-being (both within and outside of sport) can be impacted by pre-performance anxiety	○	○	○
How an athlete perceives their coaches' standard for success can impact how likely they are to experience pre-performance anxiety	○	○	○
An athlete's response to anxiety can be constructive or destructive (Constructive: helpful) (Destructive: harmful)	○	○	○
Older athletes are more likely to experience physical symptoms of pre-performance anxiety	○	○	○

Cognitive restructuring requires an athlete to reflect on their experiences (Cognitive Restructuring: a strategy for taking away the power of negative thoughts and feelings brought on by pre-performance anxiety)	○	○	○
An athlete's sense of control can impact the degree to which they experience pre-performance anxiety.	○	○	○
Both pre-performance routines and superstitions can help athletes manage pre-performance anxiety (Pre-performance routine: a set of task-relevant cognitive and behavioral strategies carried out prior to a specific skill or action) (Superstition: repetitive sequence of actions, movements, or processes completed prior to a sporting event or action)	○	○	○

An athlete's sense of confidence can help to regulate anxiety responses.	○	○	○
Pre-performance routines should be developed by the coach and given to the athlete to carry out.	○	○	○
Team athletes are more likely to experience pre-performance anxiety than individual athletes	○	○	○
Athletes returning from injury are less likely to experience pre-performance anxiety	○	○	○
Athletes are just as likely to experience pre-performance anxiety at home events in comparison to away events	○	○	○
Creating a long-term goal for athletes to focus on can help them manage pre-performance anxiety	○	○	○
An athlete experiencing pre-performance anxiety may lash out at their coach, teammate, or opponent	○	○	○

Pre-performance anxiety can occur in both games and practices	○	○	○
Implementing a performance routine to manage pre-performance anxiety is less effective for less experienced athletes	○	○	○

Please read the following scenario and select TRUE or FALSE for each question that follows the scenario.
Scenario 1: Player X is your most accurate shooter in practice. However, you notice they often miss their shots when warming up for a game. They also seem less confident and more withdrawn from their teammates on game days.

	True	False	Not Sure
Player X is likely experiencing pre-performance anxiety	○	○	○
A pre-performance routine may help Player X with their performance	○	○	○

Please read the following scenario and select TRUE or FALSE for each question that follows the scenario.
Scenario 2: Player Y is acting excessively confident prior to the championship game.

	True	False	Not Sure
Player Y is likely experiencing pre-performance anxiety.	○	○	○

Directions: For each statement select the option that best describes how you feel about each statement as it relates to your coaching practice

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that my coaching strategy should not have to change for an athlete experiencing pre-performance anxiety	○	○	○	○	○
I feel that coaches need to be extremely cautious when determining whether to intervene if an athlete is experiencing pre-performance anxiety	○	○	○	○	○
I feel that skills and strategies can be utilized to help with the management of pre-performance anxiety	○	○	○	○	○

I feel that professional athletes are more likely to experience pre-performance anxiety than other athletes	○	○	○	○	○
I feel that pre-performance anxiety is not as important as a physical element in sport	○	○	○	○	○
I feel that an athlete is responsible for managing their own pre-performance anxiety and a coach should not have to intervene	○	○	○	○	○
I feel an athlete who experiences pre-performance anxiety should be supported by their coach and offered strategies to help manage it	○	○	○	○	○
I feel that working with athletes on their mental skills is just as important as working on their physical skills	○	○	○	○	○

Directions: Think about an athlete experiencing pre-performance anxiety. Check off the following signs and symptoms they may be likely to experience (select all that apply).

- [ ] Lack of confidence
- [ ] Drowsiness
- [ ] Decreased heart rate
- [ ] Negative self-talk
- [ ] Pacing
- [ ] Poor concentration
- [ ] Excitement
- [ ] Weight gain
- [ ] Avoiding eye contact
- [ ] Increased appetite
- [ ] Muscle Tension
- [ ] Indecision
- [ ] Withdrawal
- [ ] Decreased breathing rate
- [ ] Dizziness
- [ ] Fever

Please read the following scenario and select the option that best describes your view.
Scenario 1: Player X starts to experience pre-performance anxiety. Coach A decides to have a conversation with them about the symptoms they are having, how they feel they are being impacted by their symptoms, and if they are interested in any management strategies.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that Coach A made the right decision to have a conversation with Player X	○	○	○	○	○
Most coaches would feel that Coach A made the right decision to have a conversation with Player X.	○	○	○	○	○

Please read the following scenario and select the option that best describes your view.
Scenario 2: Player Y can often be found pacing before they begin warmup for a game. When approached, they avoid making eye contact and keep touching the back of their neck. Coach B does not approach Player Y, as they feel there is nothing they can do to help them.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that Player Y should be able to manage their pre-performance anxiety symptoms on their own.	○	○	○	○	○

Most coaches would feel that Player Y should be able to manage their pre-performance anxiety symptoms on their own	○	○	○	○	○
I feel that it would be beneficial for Coach B to suggest the strategy of cognitive restructuring or a pre-performance routine to Player Y to help manage their pre-performance anxiety	○	○	○	○	○
Most coaches would feel it would be beneficial for Coach B to suggest the strategy of cognitive restructuring or a pre-performance routine to Player Y to help manage their pre-performance anxiety	○	○	○	○	○

Please read the following scenario and select the option that best describes your view.
Scenario 3: Player Z tells Coach C they often utilize pre-performance rituals to control the pre-performance anxiety, engaging in habits such as eating the same meal at the same time of day, dressing from right to left, and wearing the same pair of lucky socks.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that Coach C should help Player Z develop more task-relevant game-day routines to help manage their anxiety.	○	○	○	○	○
Most coaches would feel that Coach C should play a role in helping Player Z develop more task-relevant game-day routines to help manage their anxiety.	○	○	○	○	○

Please read the following scenario and select the option that best describes your view.
Scenario 4: Athlete D suffers from pre-performance anxiety prior to games, however, they believe if they tell their coach they will be ignored and told to deal with it.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that Athlete D should disclose their struggle to their coach because they may be able to provide some resources and skills for managing it	○	○	○	○	○
Most coaches would feel that Athlete D should disclose their struggle to	○	○	○	○	○

their coach, as they may be able to provide resources and skills for managing it

End of Block

Start of Block

After completing this survey, do you consent to continuing your participation in this research study?

- ○ Yes I consent to participating
- ○ No I do not consent to participating

End of Block

Start of Block

Have you accessed the pre-performance anxiety management resources since you were given access to the website?

- ○ Yes
- ○ No

Skip to: End of Block if Have you accessed the pre-performance anxiety management resources since you were given access to = No

Please review the following section from the initial letter of consent: After your 30-day interaction period with the resources, you will also have the option to participate in a 1-on-1 virtual interview with the study organizer. Interviews will occur via Zoom, and you will have the option to have your camera on or off to ensure anonymity if desired. Interview duration will be approximately 30 minutes-90 minutes. The purpose of these interviews is to discuss your experience with the pre-performance anxiety resources and tell us how using them may have impacted your athlete(s) and/or your coaching practice. These interviews provide you with the opportunity to give us feedback about what you liked or didn't like, what worked or didn't work, and what changes you would like to see made to the website and resources. Participation in an interview is completely voluntary and anonymous, there are no consequences for not

participating in an interview and no questions will be asked regarding the reason for not participating.

After reviewing the information above regarding the voluntary follow-up interview, would you be willing to participate in a voluntary follow-up interview with the study organizer? The interview will be conducted virtually (via Zoom) at a time convenient to you.

- ○ Yes, I would like to participate in a follow-up interview.
- ○ No, I would not like to participate in a follow-up interview.

End of Block

Start of Block

Thank you for completing this survey. You will receive an email in the next 48 hours outlining what the next steps are.

End of Block

Appendix H

Survey 3E/2C

Please enter your full name

_____

Please provide your email address

_____

End of Block

Start of Block

Please answer the following questions about the extent to which you intend to use the pre-performance anxiety resources provided by the Sport Psychology for Coaches Website

	Definitely Not	Probably Not	Possibly	Very Probably	Definitely
I plan to use pre-performance anxiety **information and strategies** from the Sport Psychology for Coaches website with my athletes in the next month	○	○	○	○	○
I plan to utilize pre-performance anxiety **worksheets** from the Sport Psychology for Coaches website in the next month	○	○	○	○	○

I will use all aspects of the pre-performance anxiety **skills and strategies** from the Sport Psychology for Coaches website with my athletes in the next month	○	○	○	○	○

The following statements concern your current feelings about the implementation of pre-performance anxiety information in your coaching practice. Please indicate how true each of the following statements is for you in your current coaching situation.

	Completely Untrue		Moderately True		Completely True
I feel a sense of choice and freedom in how I implement pre-performance anxiety information in my coaching practice	○	○	○	○	○
I feel that using pre-performance anxiety information reflects what I am trying to accomplish in my coaching practice	○	○	○	○	○
I feel that choosing to use pre-performance anxiety strategies aligns with my coaching methodology	○	○	○	○	○

I feel I am able to effectively navigate information about pre-performance anxiety management	○	○	○	○	○
I feel like “I have to” incorporate pre-performance anxiety information in my coaching practice	○	○	○	○	○
I feel forced to use pre-performance anxiety strategies I wouldn’t choose to try	○	○	○	○	○
I feel I am unable to effectively navigate information about pre-performance anxiety management	○	○	○	○	○
Incorporating pre-performance anxiety information and strategies into my coaching practice feels like an obligation	○	○	○	○	○
I feel confident that I can effectively teach pre-performance anxiety strategies in my coaching practice	○	○	○	○	○

I feel capable of implementing pre-performance anxiety strategies into my coaching practice	○	○	○	○	○
I feel competent when navigating information about pre-performance anxiety management	○	○	○	○	○
I feel I can successfully implement difficult pre-performance anxiety management strategies in my coaching practice	○	○	○	○	○
I have serious doubts about whether I can use pre-performance anxiety management strategies in my coaching practice	○	○	○	○	○
I feel disappointed with my previous efforts of incorporating pre-performance anxiety information into practice	○	○	○	○	○

I do not feel competent when navigating information about pre-performance anxiety management	○	○	○	○	○
I feel like a failure when I struggle to integrate pre-performance anxiety management skills and strategies into my coaching practice	○	○	○	○	○

End of Block

Start of Block

Please read the following statements and select TRUE or FALSE for each question.

	True	False	Not Sure
Pre-performance anxiety impacts only 10% of athletes (Pre-performance anxiety: heightened mental and/or physiological arousal that occurs before an athlete partakes in a sports event or action within sport)	○	○	○

Developing a pre-performance or pre-event plan for managing pre-performance anxiety symptoms is less effective than developing a plan after an athlete experiences symptoms	○	○	○
Anxiety symptoms can be helpful or harmful to an athlete's performance	○	○	○
An athlete's well-being (both within and outside of sport) can be impacted by pre-performance anxiety	○	○	○
How an athlete perceives their coaches' standard for success can impact how likely they are to experience pre-performance anxiety	○	○	○
An athlete's response to anxiety can be constructive or destructive (Constructive: helpful) (Destructive: harmful)	○	○	○

Older athletes are more likely to experience physical symptoms of pre-performance anxiety	○	○	○
Cognitive restructuring requires an athlete to reflect on their experiences (Cognitive Restructuring: a strategy for taking away the power of negative thoughts and feelings brought on by pre-performance anxiety)	○	○	○
An athlete's sense of control can impact the degree to which they experience pre-performance anxiety.	○	○	○
Both pre-performance routines and superstitions can help athletes manage pre-performance anxiety (Pre-performance routine: a set of task-relevant cognitive and behavioural strategies carried out prior to a specific skill or action) (Superstition: repetitive sequence of actions, movements, or processes completed prior to a sporting event or action)	○	○	○

An athlete's sense of confidence can help to regulate anxiety responses.	○	○	○
Pre-performance routines should be developed by the coach and given to the athlete to carry out.	○	○	○
Team athletes are more likely to experience pre-performance anxiety than individual athletes	○	○	○
Athletes returning from injury are less likely to experience pre-performance anxiety	○	○	○
Athletes are just as likely to experience pre-performance anxiety at home events in comparison to away events	○	○	○
Creating a long-term goal for athletes to focus on can help them manage pre-performance anxiety	○	○	○
An athlete experiencing pre-performance anxiety may lash out at their coach, teammate, or opponent	○	○	○

Pre-performance anxiety can occur in both games and practices	○	○	○
Implementing a performance routine to manage pre-performance anxiety is less effective for less experienced athletes	○	○	○

Please read the following scenario and select TRUE or FALSE for each question that follows the scenario.
Scenario 1: Player X is your most accurate shooter in practice. However, you notice they often miss their shots when warming up for a game. They also seem less confident and more withdrawn from their teammates on game days.

	True	False	Not Sure
Player X is likely experiencing pre-performance anxiety	○	○	○
A pre-performance routine may help Player X with their performance	○	○	○

Please read the following scenario and select TRUE or FALSE for each question that follows the scenario.
Scenario 2: Player Y is acting excessively confident prior to the championship game.

	True	False	Not Sure
Player Y is likely experiencing pre-performance anxiety.	○	○	○

Directions: For each statement select the option that best describes how you feel about each statement as it relates to your coaching practice

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that my coaching strategy should not have to change for an athlete experiencing pre-performance anxiety	○	○	○	○	○
I feel that coaches need to be extremely cautious when determining whether to intervene if an athlete is experiencing pre-performance anxiety	○	○	○	○	○
I feel that skills and strategies can be utilized to help with the management of pre-performance anxiety	○	○	○	○	○
I feel that professional athletes are more likely to experience pre-performance anxiety than other athletes	○	○	○	○	○

I feel that pre-performance anxiety is not as important as a physical element in sport	○	○	○	○	○
I feel that an athlete is responsible for managing their own pre-performance anxiety and a coach should not have to intervene	○	○	○	○	○
I feel an athlete who experiences pre-performance anxiety should be supported by their coach and offered strategies to help manage it	○	○	○	○	○
I feel that working with athletes on their mental skills is just as important as working on their physical skills	○	○	○	○	○

Page Break

Directions: Think about an athlete experiencing pre-performance anxiety. Check off the following signs and symptoms they may be likely to experience (select all that apply).

- [ ] Lack of confidence
- [ ] Drowsiness
- [ ] Decreased heart rate
- [ ] Negative self-talk
- [ ] Pacing
- [ ] Poor concentration
- [ ] Excitement
- [ ] Weight gain
- [ ] Avoiding eye contact
- [ ] Increased appetite
- [ ] Muscle Tension
- [ ] Indecision
- [ ] Withdrawal
- [ ] Decreased breathing rate
- [ ] Dizziness
- [ ] Fever

Please read the following scenario and select the option that best describes your view.
Scenario 1: Player X starts to experience pre-performance anxiety. Coach A decides to have a conversation with them about the symptoms they are having, how they feel they are being

impacted by their symptoms, and if they are interested in any management strategies.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that Coach A made the right decision to have a conversation with Player X	○	○	○	○	○
Most coaches would feel that Coach A made the right decision to have a conversation with Player X.	○	○	○	○	○

Please read the following scenario and select the option that best describes your view.
Scenario 2: Player Y can often be found pacing before they begin warmup for a game. When approached, they avoid making eye contact and keep touching the back of their neck. Coach B does not approach Player Y, as they feel there is nothing they can do to help them.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that Player Y should be able to manage their pre-performance anxiety symptoms on their own.	○	○	○	○	○

Most coaches would feel that Player Y should be able to manage their pre-performance anxiety symptoms on their own	○	○	○	○	○
I feel that it would be beneficial for Coach B to suggest the strategy of cognitive restructuring or a pre-performance routine to Player Y to help manage their pre-performance anxiety	○	○	○	○	○
Most coaches would feel it would be beneficial for Coach B to suggest the strategy of cognitive restructuring or a pre-performance routine to Player Y to help manage their pre-performance anxiety	○	○	○	○	○

Please read the following scenario and select the option that best describes your view.
Scenario 3: Player Z tells Coach C they often utilize pre-performance rituals to control the pre-performance anxiety, engaging in habits such as eating the same meal at the same time of day, dressing from right to left, and wearing the same pair of lucky socks.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that Coach C should help Player Z develop more task-relevant game-day routines to help manage their anxiety.	○	○	○	○	○
Most coaches would feel that Coach C should play a role in helping Player Z develop more task-relevant game-day routines to help manage their anxiety.	○	○	○	○	○

Please read the following scenario and select the option that best describes your view.
Scenario 4: Athlete D suffers from pre-performance anxiety prior to games, however, they believe if they tell their coach they will be ignored and told to deal with it.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I feel that Athlete D should disclose their struggle to their coach because they may be able to provide some resources and skills for managing it	○	○	○	○	○

Most coaches would feel that Athlete D should disclose their struggle to their coach, as they may be able to provide resources and skills for managing it	○	○	○	○	○

End of Block

Start of Block

After completing this survey, do you consent to continuing your participation in this research study?

- ○ Yes I consent to participating
- ○ No I do not consent to participating

End of Block

Start of Block

Thank you for completing this survey. You will receive an email in the next 48 hours outlining what the next steps are.

End of Block

Appendix I

Participant Debrief Form

Thank you for participating in our study. You participation has provided us with valuable data regarding how coaches interact with an online sport psychology resource and the effectiveness of various delivery methods used to distribute sport psychology information to coaches. The purpose of our study was to explore the efficacy of two differing delivery methods (structured versus unstructured) when delivering sport psychology information to coaches via resources outlining skills and strategies for managing pre-performance anxiety.

Some of you were supplied with a guide for where to start, how we suggest navigating through the resources, and when to apply certain strategies – making up the structured delivery group. Some of you were not provided with the guide and were simply asked to interact with the website how you saw fit – making up the unstructured delivery group. Both groups were provided with the exact same resources regarding pre-performance anxiety and both groups were asked to interact with the website for a 30-day intervention period.

We expect individuals who had access to the guide will demonstrate greater intention to use the resources, demonstrate greater knowledge of and more positive attitudes toward pre-performance anxiety, feel a heightened sense of autonomy and competence when utilizing the resources, and will overall be more likely to integrate the information into coaching practice.

A pilot test had previously been conducted with the same website (Sport Psychology for Coaches) where participants reported a guide for how to navigate the resources may be beneficial in fostering comprehension and supporting coaches' learning needs (Farhat et al., 2022). These participants also demonstrated a significant interest in anxiety-related sport psychology information (Farhat et al., 2022). Therefore, this study developed pre-performance anxiety resources and a structured guide outlining how best to navigate them.

After receiving this debrief, you have one week to withdraw your data from the study if you no longer with to participate. To do so, please contact the principal investigator via the methods listed below. Once the one-week period is up, you will no longer be able to withdraw your data from the study. There are no consequences for withdrawing your data from this study and no questions will be asked regarding the reason for withdrawal of the data.

The outline of this study has been reviewed by a Research Ethics Board at the University of Alberta (Pro00132563). If you have any questions regarding your rights as a research participant of how the research is being conducted, you may contact the Research Ethics Office at 780-492-2615.

If you have any questions or require more information about the study itself, you may contact the principal investigator (Courtney Stevens) or her co-investigator/supervisor (Dr. Paige Pope) through the methods mentioned below.

Principal Investigator(s) (Student): Courtney Stevens
Graduate Student

Department of Kinesiology
University of Lethbridge
Lethbridge, AB
Email: courtney.stevens@uleth.ca

Co-Investigator(s) (Supervisor):

Dr. Paige Pope
Associate Professor
Department of Kinesiology
University of Lethbridge
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Thank you again for your time and participation in this research study.

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Appendix J

Adapted Version of the Rosenbaum Concussion Knowledge and Attitudes Survey – Coach Form (RoCKAS-CH)

Section 1

Directions: Please read the following statements and select TRUE or FALSE for each question.

Pre-performance anxiety impacts only 10% of athletes (Pre-performance anxiety: heightened mental and/or physiological arousal that occurs before an athlete partakes in a sports event or action within sport)	TRUE	FALSE
Developing pre-performance or pre-event plan for managing pre-performance anxiety symptoms is less effective than developing a plan after an athlete experiences symptoms	TRUE	FALSE
Anxiety symptoms can be helpful or harmful to an athlete's performance.	TRUE	FALSE
An athlete's well-being (both within and outside of sport) can be impacted by pre-performance anxiety.	TRUE	FALSE
How an athlete perceives their coaches' standard for success can impact how likely they are to experience pre-performance anxiety.	TRUE	FALSE
An athlete's response to anxiety can be constructive or destructive. (Constructive: helpful) (Destructive: harmful)	TRUE	FALSE
Older athletes are more likely to experience physical symptoms of pre-performance anxiety	TRUE	FALSE
Cognitive restructuring requires an athlete to reflect on their experiences (Cognitive Restructuring: a strategy for taking away the power of negative thoughts and feelings brought on by pre-performance anxiety)	TRUE	FALSE
An athlete's sense of control can impact the degree to which they experience pre-performance anxiety.	TRUE	FALSE
Both pre-performance routines and superstitions can help athletes manage pre-performance anxiety (Pre-performance routine: a set of task-relevant cognitive and behavioural strategies carried out prior to a specific skill or action) (Superstition: repetitive sequence of actions, movements, or processes completed prior to a sport event or action)	TRUE	FALSE
An athlete's sense of confidence can help to regulate anxiety responses.	TRUE	FALSE
Pre-performance routines should be developed by the coach and given to the athlete to carry out.	TRUE	FALSE
Team athletes are more likely to experience pre-performance anxiety than individual athletes	TRUE	FALSE
Athletes returning from injury are less likely to experience pre-performance anxiety	TRUE	FALSE
Athletes are just as likely to experience pre-performance anxiety at home events in comparison to away events	TRUE	FALSE
Creating a long-term goal for athletes to focus on can help them manage pre-performance anxiety	TRUE	FALSE

An athlete experiencing pre-performance anxiety may lash out at their coach, teammate, or opponent	TRUE	FALSE
Pre-performance anxiety can occur in both games and practices	TRUE	FALSE
Implementing a performance routine to manage pre-performance anxiety is less effective for less experienced athletes	TRUE	FALSE

Section 2

Directions: Please read each of the following scenarios and select TRUE or FALSE for each question that follows the scenarios.

Scenario 1: Player X is your most accurate shooter in practice. However, you notice they often miss their shots when warming up for a game. They also seem less confident and more withdrawn from their teammates on game days.

Player X is likely experiencing pre-performance anxiety	TRUE	FALSE
A pre-performance routine may help Player X with their performance	TRUE	FALSE

Scenario 2: Player Y is acting excessively confident prior to the championship game.

Player Y is likely experiencing pre-performance anxiety.	TRUE	FALSE

Section 3

Directions: For each statement select the number that best describes how you feel about each statement

	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
I feel that my coaching strategy should not have to change for an athlete experiencing pre-performance anxiety	1	2	3	4	5
I feel that coaches need to be extremely cautious when determining whether to intervene if an athlete is experiencing pre-performance anxiety	1	2	3	4	5
I feel that skills and strategies can be utilized to help with the management of pre-performance anxiety	1	2	3	4	5
I feel that professional athletes are more likely to experience pre-performance anxiety than other athletes	1	2	3	4	5

I feel that pre-performance anxiety is not as important as a physical element in sport	1	2	3	4	5
I feel that an athlete is responsible for managing their own pre-performance anxiety and a coach should not have to intervene	1	2	3	4	5
I feel an athlete who experiences pre-performance anxiety should be supported by their coach and offered strategies to help manage it	1	2	3	4	5
I feel that working with athletes on their mental skills is just as important as working on their physical skills	1	2	3	4	5

Section 4

Directions: For each question read the scenarios and select the number that describes your view.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Scenario 1: Player X starts to experience pre-performance anxiety. Coach A decides to have a conversation with them about the symptoms they are having, how they feel they are being impacted by their symptoms, and if they are interested in any management strategies.					
.					
I feel that coach A made the right decision to have a conversation with Player X	1	2	3	4	5
Most coaches would feel that Coach A made the right decision to have a conversation with Player X.	1	2	3	4	5
Scenario 2: Player Y can often be found pacing before they begin warmup for a game. When approached, they avoid making eye contact and keep touching the back of their neck. Coach B does not approach Player Y, as they feel there is nothing they can do to help them.					
I feel that Player Y should be able to manage their pre-performance anxiety symptoms on their own.	1	2	3	4	5
Most coaches would feel that Player Y should be able to manage their pre-performance anxiety symptoms on their own	1	2	3	4	5
I feel that it would be beneficial for Coach B to suggest the strategy of cognitive restructuring or a pre-performance routine to Player Y to help manage their pre-performance anxiety	1	2	3	4	5

Most coaches would feel it would be beneficial for Coach B to suggest the strategy of cognitive restructuring or a pre-performance routine to Player Y to help manage their pre-performance anxiety	1	2	3	4	5

Scenario 3: Player Z tells Coach C they often utilize pre-performance rituals to control the pre-performance anxiety, engaging in habits such as eating the same meal at the same time of day, dressing from right to left, and wearing the same pair of lucky socks.

I feel that Coach C should help Player Z develop more task-relevant game-day routines to help manage their anxiety.	1	2	3	4	5
Most coaches would feel that Coach C should play a role in helping Player Z develop more task-relevant game-day routines to help manage their anxiety.	1	2	3	4	5

Scenario 4: Athlete D suffers from pre-performance anxiety prior to games, however, they believe if they tell their coach they will be ignored and told to deal with it.

I feel that Athlete D should disclose their struggle to their coach because they may be able to provide some resources and skills for managing it	1	2	3	4	5
Most coaches would feel that Athlete D should disclose their struggle to their coach, as they may be able to provide resources and skills for managing it	1	2	3	4	5

Section 5

Directions: Think about an athlete experiencing pre-performance anxiety. Select the signs and symptoms they may be likely to experience (select all that apply).

	Lack of confidence		Drowsiness
	Decreased heart rate		Negative Self-Talk
	Pacing		Poor Concentration
	Excitement		Weight Gain
	Avoiding eye contact		Increased appetite
	Muscle Tension		Indecision
	Withdrawal		Decreased breathing rate
	Dizziness		Fever

Appendix K

Adapted Version of the Basic Psychological Need Satisfaction and Frustration Scale (BPNSFS)

The following statements concern your current feelings about the implementation of pre-performance anxiety information in your coaching practice. Please indicate how true each of the following statements is for you in your current coaching situation.

	Completely Untrue				**Completely True**
I feel a sense of choice and freedom in how I implement pre-performance anxiety information in my coaching practice	1	2	3	4	5
I feel that utilizing pre-performance anxiety information reflects what I am trying to accomplish in my coaching practice	1	2	3	4	5
I feel that choosing to utilize pre-performance anxiety strategies aligns with my coaching methodology	1	2	3	4	5
I feel I have been utilizing pre-performance anxiety management strategies that really interest me	1	2	3	4	5
I feel like “I have to” incorporate pre-performance anxiety information in my coaching practice	1	2	3	4	5
I feel forced to employ pre-performance anxiety strategies I wouldn’t choose to try	1	2	3	4	5
I feel pressured to incorporate lots of pre-performance anxiety information into my coaching practice	1	2	3	4	5
Incorporating pre-performance anxiety information and strategies into my coaching practice feels like an obligation	1	2	3	4	5
I feel confident that I can effectively teach pre-performance anxiety strategies in my coaching practice	1	2	3	4	5
I feel capable of implementing pre-performance anxiety strategies into my coaching practice	1	2	3	4	5
I feel competent to achieve my goal of utilizing pre-performance anxiety skills and strategies in my coaching practice	1	2	3	4	5
I feel I can successfully implement difficult pre-performance anxiety management strategies in my coaching practice	1	2	3	4	5
I have serious doubts about whether I can employ pre-performance anxiety management strategies in my coaching practice	1	2	3	4	5

I feel disappointed with my previous efforts of incorporating pre-performance anxiety information into practice	1	2	3	4	5
I feel insecure about my ability to implement pre-performance anxiety management strategies in my coaching practice	1	2	3	4	5
I feel like a failure because I struggle to integrate pre-performance anxiety management skills and strategies into my coaching practice	1	2	3	4	5

Appendix L

Adapted Version of the Measure of Innovation-Specific Implementation Intentions Scale (MISII)

Directions: Please answer the following questions about the extent to which you intend to use the pre-performance anxiety resources provided by the Sport Psychology for Coaches Website.

	Not at all	To a slight extent	To a moderate extent	To a great extent	To a very great extent
I plan to use pre-performance anxiety information from the Sport Psychology for Coaches website with my athletes in the next month	0	1	2	3	4
I plan to utilize pre-performance anxiety strategies from the Sport Psychology for Coaches website in next month	0	1	2	3	4
I will use all aspects of the pre-performance anxiety skills and strategies from the Sport Psychology for Coaches website with my athletes in the next month	0	1	2	3	4

Appendix M

Interview Guide

Questions in red = structured group participants only

Formalities

- Participation in this interview is completely voluntary and anonymous. You can refuse to answer any question posed, and you are able to stop the interview at any time with no consequences and no questions asked. You are welcome to have your camera on or off for the duration of the interview.
- This interview is being audio recorded for the purpose of data analysis, and all data collected will be labelled with your anonymous participant ID and stored on a password protected computer in a locked lab at the University of Lethbridge.

Rapport building

- Introduction
    - Who I am, my involvement in the study, etc.
    - Here to listen to your opinion, your suggestions help us make resources better, don't need to sugar coat, will not take offense to criticism/suggestions/dislikes, etc
- Can you tell me about your current coaching position?
    - What does a typical week look like?
- Can you tell me about your previous coaching experiences?
- Can you describe your time commitment to your coaching practice?
- Before the study began, what did you do to address the mental side of sport?
    - How is it prioritized in comparison to other aspects of your coaching practice?
- How open do you think your athlete(s) are to learning sport psychology skills and strategies?
- What made you want to participate in the study?
    - What did you hope to gain from participating?

Purpose of Interview

- For this study, it's important that we learn about your experiences as a coach utilizing the sport psychology information we provided and how you feel your coaching practice may have been influenced. The purpose of this interview is to discuss your experiences with the pre-performance anxiety resources (and the guide we provided) to help us learn how using them may have impacted your athlete(s) and your coaching practice.

Question Period

- Before you participated in the study, what did you know or think you knew about pre-performance anxiety or athletes that experience pre-performance anxiety?
- Have your knowledge or perceptions of pre-performance anxiety changed over the course of the study?

    - If so, how?
        - What did you learn from the information and resources provided on the website?
        - Did you come across information or strategies you hadn't considered before?
            - What information? Which strategies?
- How did the way we delivered the information influence your learning about pre-performance anxiety?
- Do you think the guide impacted your knowledge or perceptions of pre-performance anxiety?
    - If so, how?
        - Why do you think that?
    - How do you think the guide could have a greater impact on your knowledge of pre-performance anxiety?
- Was there anything else you hoped to learn?
- Could you walk me through the resources you used?
    - Why did you choose/not choose the resources you did?
    - What did you like/dislike about these resources?
- When did you try to implement strategies?
    - Were there certain strategies you implemented in certain situations?
- How did you find the process of sharing pre-performance anxiety management information and strategies with your athlete(s)?
    - Were your athletes receptive?
    - How did your athletes' responses to the introduction of this information impact your use of the resources?
- How did you find the process of navigating through all the information?
    - Do you have any suggestions for how we could help make navigation of the information easier for coaches?
    - How would you feel if more direction was provided for navigating through the information?
- How strongly did you adhere to the guide?
    - Why do you think that was?
- How did the guide impact your use of the information and strategies in your coaching practice?
    - What could strengthen the guide to better support you and help integrate the information into your coaching practice?
    - Are there any alternatives to the guide that you feel could be beneficial?
- How do you feel this experience has impacted your coaching practice?
    - Do you intend to implement the information and strategies in your coaching practice moving forward?
        - How do you intend to do so?
        - Why do you feel you won't continue using the resources?

            - What would make you want to continue interacting with the resources?
        - Are there any you didn't use throughout the study, but intend to use in the future?
            - Why?
- We gave you a lot of information and resources, how did the way we delivered the information influence how you moved through it all?
- How did you choose the resources you interacted with?
    - How did you plan out your incorporation of the information in your coaching practice?

- Before you participated in the study, how prepared did you feel you were to deal with an athlete experiencing pre-performance anxiety?
- How has your confidence in your ability to work with athletes in managing their pre-performance anxiety changed over the course of the study?
    - What resources made you feel more confident in working with your athletes regarding pre-performance anxiety?
        - How? Why?
    - Were there any resources that made you feel less confident in your ability to work with athletes in managing their pre-performance anxiety?
        - Which ones? Why?
- How did the way we delivered the information influence your confidence in your ability to use pre-performance anxiety management information into your coaching practice?
- How comfortable would you feel working with an athlete experiencing pre-performance anxiety today?

Open Reflection

- Is there anything else you would like to say about the website, the resources, the guide, or your experience within the study?

Closing

- Are there any questions you have for me at this time?
    - If you think of any questions, please feel free to reach out
- You will receive an email later today with our debrief form. It outlines the full parameters of the study and the particulars of what we were hoping to address with our research.
- Thank you for your participation in this study, we appreciate your willingness to participate in our research and provide valuable insight into the coaching experience.