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Online Psychological Skills Training Programs: A Systematic Review of Program Websites

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The purpose of this paper was to identify and describe sport-based psychological skills training (PST) programs available online. An eight-step systematic review methodology for identifying and describing websites was used to search for programs delivered asynchronously through online learning modules, designed for athletes, and presented in English. Information available through a program's home page(s) (i.e., website) was used for analysis, as individual modules were not evaluated in this study. Information from these websites was assessed for readability and quality; the DISCERN instrument was used to assess the quality of information included to describe each program. Descriptive statistics and content analyses were employed to describe various program characteristics, categorized as access and audience, delivery, and content. Overall, 18 online module-based PST programs were identified. Most information on a program's website was rated as fairly difficult to read, and DISCERN scores were often poor. Nevertheless, programs were generally framed for athletes of all competitive levels, varied considerably in how they were delivered (e.g., number of modules, time to complete), and offered content on a variety of topics in sport psychology (e.g., imagery, attentional control). This study identifies the current state of PST programs available online and provides a descriptive account of these programs. This research advances several implications for research and practice, including the need to investigate the effectiveness of online PST programs.

Keywords: online sport psychology, learning modules, mental skills, content analysis

In sport, many athletes complement their physical skills with psychological skills to improve their performance (Barker et al., 2020; Munroe-Chandler & Guerrero, 2017). In fact, when psychological skills (e.g., imagery) are taught in a deliberate and systematic manner (e.g., psychological skills training; PST), athletes may experience increased sport enjoyment and improved self-satisfaction (Munroe-Chandler & Hall, 2021). Athletes may engage in PST one-on-one with a practitioner (e.g., consultant, coach) or through educational sessions with their team (Winter & Collins, 2016). While such education and training often occur in person (Fletcher & Wagstaff, 2009; Munroe-Chandler & Guerrero, 2017), a growing trend in sport psychology has been the use of online (i.e., web-based) modalities to provide these services, such as videoconferencing or learning modules (Price et al., 2022; Weinberg et al., 2012). Although discussion and interest in online PST has been growing over the past two decades (e.g., Stodel & Farres, 2002; Weinberg et al., 2012), the need for online PST was accelerated by the COVID-19 pandemic (Price et al., 2022). With the cessation of most in-person sport programming (e.g., Kelly et al., 2020), practitioners pivoted to online modalities to offer PST (Price et al., 2022). Therefore, the general purpose of the current paper was to identify and describe sport-based PST programs available online. Specific research questions included: (a) how many online PST programs are available online? and (b) what are the characteristics of these programs (e.g., audience, content areas)?

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Modalities and Types of Online Programs

Online intervention programs can be offered synchronously, asynchronously, or through a blended approach (i.e., a combination of online modalities and in-person sessions). How the athlete and practitioner interact is what distinguishes each modality. In synchronous programs, interaction occurs concurrently, often through videoconferencing software (e.g., Zoom). Conversely, in asynchronous programs, communication

between athlete and practitioner is not concurrent, such as through a self-paced learning module prescribed by the practitioner. Given the different ways synchronous and asynchronous programs could be designed, Barak and Grohol (2011) categorized online programs into five distinct types. Although these types were derived from clinical psychology, they parallel sport psychology online programming: (a) online counseling and psychotherapy (e.g., videoconferencing; Price et al., 2022), (b) psychoeducational websites (e.g., Farhat et al., 2022), (c) interactive, self-guided interventions (e.g., learning modules; Weinberg et al., 2012), (d) online support groups or blogs (e.g., Villani et al., 2017), and (e) other (e.g., mobile applications; Durand-Bush & DesClouds, 2018). While each type is unique, multiple types may be offered or combined within a given program (e.g., Thrower et al., 2019).

Interactive Self-Guided Interventions: Learning Modules

Barak and Grohol (2011) defined interactive self-guided interventions as a technology that "offers an individual the opportunity to interact with a structured, self-guided software program online that steps them through a program of self-help" (pp. 157–158). These programs include a series of learning modules aimed to provide education and exercises on a given topic (e.g., Weinberg et al., 2012). In general, most learning modules are asynchronous, interactive (e.g., activities in which participants engage with content), self-paced (i.e., participants can start, stop, and continue at any time), and integrate different modes of delivery (i.e., automated feedback, access to an expert) (Webb et al., 2010). Across different domains, learning modules can be effective for a host of outcomes. For instance, in clinical psychology, learning modules have been used to help patients mitigate symptoms of depression and anxiety (Barazzone et al., 2012; O'Kearney et al., 2009). These programs have also been popularized for providing a cost-effective opportunity for those in typically underserved communities to access counseling-related services (e.g., rural, low socioeconomic status; Barak & Grohol, 2011). Moreover, in a sport context, learning modules have been used in coach and parent education, as they offer a widespread, affordable, and convenient means to deliver content (Driska, 2018; Thrower et al., 2019). For example, coaches who completed a module-based coach education program developed by USA Swimming reported that the online program was delivered effectively and enhanced their knowledge of skills, drills, and pedagogy associated with coaching swimming (Driska, 2018).

Online learning modules may offer several practical advantages to athletes interested in PST. Working with a consultant one-on-one can be costly, ranging from $100-150 USD per hour (Neff & Carlson, 2016; Weinberg et al., 2012), which could be a barrier to those without the financial resources to afford such services. Supporters of online module-based PST programs have proposed offering them at a reduced rate (Neff & Carlson, 2016; Stodel & Farres, 2002; Weinberg et al., 2012); however, to date, no empirical evidence has indicated if such programs are, in fact, cost-effective. Moreover, in North America, there are limited full-time sport psychology consultants (Martin, 2020), thereby reducing the opportunities for athletes across all levels of sport to access PST.

Given that learning modules are self-paced and delivered asynchronously, they could provide all athlete populations an avenue to pursue PST, particularly non-elite athletes (Stodel & Farres, 2002; Weinberg et al., 2012). Nevertheless, even if an athlete has the financial means and access to a consultant, there are still logistical barriers that make consistent engagement with PST challenging (e.g., scheduling, limited time; Stodel & Farres, 2002; Weinberg et al., 2012; Wylleman & Lavallee, 2004). An online PST program may provide flexibility to those athletes looking to incorporate PST into their already busy schedule (e.g., reduce travel, instant access). Weinberg and colleagues (2012) considered many of these reasons when they developed an online PST program for athletes. Although no empirical data were presented within their paper, these authors provided details on the characteristics of their program, including that it was fully asynchronous, contained interactive activities, and was developed by experts in sport psychology who followed best-practice recommendations for PST.

Availability of Online PST Programs

Online PST programs could have immense practical value; however, it is unclear whether these types of programs are readily available to athletes. In commentaries by Stodel and Farres (2002) and Weinberg et al. (2012), each reported searching the internet for online PST programs, with both sets of authors finding no such programs. Despite the possibility that no online PST program existed at the time of previous internet searches (e.g., Stodel & Farres, 2002; Weinberg et al., 2012), these searches did not appear to follow a systematic structure. For instance, Stodel and Farres (2002) simply noted they were unable to locate any interactive online PST program developed by expert practitioners on the internet. Weinberg and colleagues

(2012) reported the same findings from their search in 2010. Although these authors may have followed some type of systematic process when conducting their search, no methodology was reported. However, in more recent publications, others have noted athletes' engagement in online PST programs (Cogan, 2019; Neff & Carlson, 2016; Schneider, 2016), suggesting that online PST programs do exist. Therefore, identifying available online PST programs and, in turn, describing what they entail would be valuable information for researchers and practitioners.

Since those initial searches in the early to mid-2000s, Rew and colleagues (2018) developed a systematic review methodology for conducting internet searches to identify and describe online content found on websites. This methodology incorporates guidelines from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA; Shamseer et al., 2015) to assist in the description and transparency of the steps employed in the search and analysis. This eight-step approach includes (a) select topic, (b) determine purpose of analysis, (c) select search terms and engines, (d) develop and apply website inclusion and exclusion criteria, (e) develop processes and tools to manage search results, (f) specify measures of quality, (g) compute readability, and (h) evaluate websites (Rew et al., 2018). Given that online module-based PST programs would need to be 'housed' on a website (e.g., Neff & Carlson, 2016; Weinberg et al., 2012), the methodology put forth by Rew et al. (2018) would seemingly allow researchers to identify PST programs available online, which could then be described by a variety of program characteristics (e.g., content areas, developed by an expert; Stodel & Farres, 2002; Weinberg et al., 2012).

Characteristics of Online PST Programs

In some domains, the prevalence of online module-based programs has allowed researchers to evaluate programs on their effectiveness (e.g., Barazzone et al., 2012; Driska, 2018; O'Kearney et al., 2009; Thrower et al., 2019). However, in sport, there is so little descriptive knowledge of these programs that evaluation may not be plausible. Instead, describing the characteristics of these programs would appear to be a timely next step. For example, Rew and colleagues (2018) noted that when assessing information on a website, it is valuable to record general information (e.g., date program was created) and assess both the readability and quality of information provided on a website. Readability refers to one's ability to read and understand the material presented in order to make an informed decision on the information and program (Storms et al., 2017).

Moreover, one way to measure the quality of information on a website is through the DISCERN instrument (Charnock et al., 1999). DISCERN (not an acronym) was developed to assess the quality of treatment choices for health conditions provided on consumer-oriented websites (Charnock et al., 1999; Rew et al., 2018). DISCERN does not assess quality information on a specific health condition but rather provides a list of general quality-related items (e.g., are the aims clear?) so those with specific content expertise can assess within their own discipline (Rew et al., 2018). Although, to our knowledge, this instrument has not been used within sport psychology, it has been employed to assess websites containing information on psychological conditions such as depression (Zermatten et al., 2010) or bipolar disorder (Morel et al., 2008) and thus could be beneficial when assessing the quality of information on PST.

Other characteristics of interest include the audience, delivery, and content of these programs. Conceptually, it makes sense that an online PST program could reach more athletes than any consultant could. However, who are these programs designed to serve? Researchers have noted that online PST programs could be used to target non-elite athletes (Stodel & Farres, 2002; Weinberg et al., 2012), but are these opportunities available to athletes of various ages, sport types, typically marginalized groups, or who have limited access to high-speed internet (e.g., Curtis et al., 2022)? Knowledge of such information would demonstrate the current audience of online PST programs and create opportunities to grow programming in the future. Moreover, how are these programs delivered? While this could include details on the length of a program (e.g., number of hours of content; Santos et al., 2019), it could also extend to the specific ways in which content is communicated within a module (e.g., automated features, supplemental material; Webb et al., 2010). Lastly, which psychological skills are presented in these programs? Beyond the psychological skills noted in the online program developed by Weinberg and colleagues (e.g., imagery, attentional control; 2012), little is known regarding which psychological skills might be used in these programs and whether or not these align with common frameworks for designing PST programs (e.g., Durand-Bush et al., 2023; Ely et al., 2023). Altogether, the purpose of the current paper was to identify and describe sport-based PST programs available online.

Method

Design

The current study followed Rew and colleagues' (2018) eight-step systematic review methodology for conducting an internet search of websites to identify available online PST programs. As module-based programs are generally housed on a website (e.g., Neff & Carlson, 2016; Weinberg et al., 2012), such websites often serve as a home page for a program and operate as a marketing tool to inform prospective clients about a program's services (Farres & Stodel, 2003). Prospective clients (e.g., athletes) can use these home pages to gather information about an online PST program to ultimately decide if they will enroll in the program or not. To mirror this approach and broadly describe online PST programs, only information available through a program's home page was used to describe program characteristics; no program was evaluated for its effectiveness. Specific program characteristics were noted using descriptive statistics or content analyses. Descriptive statistics included calculating means, percentages, and/or frequency counts, while content analyses were conducted from a deductive and/or inductive approach; each is outlined in more detail in the data analysis section.

Data Collection and Measures

The data collection process followed Rew and colleagues' (2018) eight-step systematic review methodology for conducting an internet search for websites. Each step is presented below. The measures used to describe program characteristics can be found in Steps 6, 7, and 8.

1. Select Topic

The topic of online module-based PST programs was selected given its novelty in the literature and the practical benefits that could arise from such programming. This topic was considered specific enough to produce a manageable and meaningful search (Rew et al., 2018).

2. Determine Purpose of Analysis

The general purpose of this search and analysis was to broadly identify and describe online PST programs. This included identifying PST programs available online and subsequently describing the characteristics of these programs. In all, this search was intended to be descriptive in nature as opposed to an evaluation of any particular online PST program.

3. Select Search Terms and Engines

A total of 16 web searches were conducted in June 2022 to identify online PST programs. Eight search terms were developed to reflect both technical and lay interpretations of online PST programs in sport (e.g., "mental skills training for athletes online"; see Table 1). No quotation marks or Boolean search strategies were employed to simulate a typical consumer search (Stern et al., 2021). The search engines Google and Bing were used for each search term (e.g., Rew et al., 2018), resulting in eight searches per search engine (Google and Bing account for almost

Table 1. Search terms and number of hits by search engine

Search Term	Total number of hits	
	Google	Bing
Psychological skills training online	119,000,000	24,000,000
Mental skills training online	203,000,000	227,000
Psychological skills training for athletes online	104,000,000	56,500,000
Mental skills training for athletes online	63,100,000	76,100,000
Performance psychology for athletes online	9,240,000	76,600,000
Sport psychology for elite athletes online	9,290,000	104,000,000
Sport psychology for youth athletes online	141,000,000	126,000,000
Online learning modules on sport psychology	22,700,000	120,000,000

Note. All searches took place on June 23 or 24, 2022.

95% of all searches worldwide; Chris, 2022). Further, all searches were conducted using the web browser Google Chrome and utilized 'incognito mode' to limit the impact of previous search history (Dy et al., 2012; Stern et al., 2021).

Identification. For each of the 16 searches, the first 25 'hits' (i.e., web links) were recorded for further screening, resulting in 400 total hits. Recording the first 25 hits per search was determined as the cut-off for each search as this mirrors that of a consumer search and aligns with previous research (Dy et al., 2012; Rew et al., 2018). Further, as the number of hits per search ranged from 227,000 to 203,000,000 (see Table 1), it would be impractical for the research team to evaluate each hit (Rew et al., 2018).

4. Develop and Apply Website Inclusion Criteria

Screening. Once the list of 400 hits was populated, all duplicate links were removed (n = 192). To be included, website content had to be intended for or framed in a sport context, be related to sport psychology (e.g., PST, team building), and be written in English; 48 websites were removed for not meeting these criteria. Further, websites were excluded from analysis if they were an advertisement, academic program, book, journal article, link to resources, link to consultants, certificate program, module exclusively for coaches, expired link, course content, link to a video, or a news article on sport psychology; 82 websites were excluded (see Figure 1)

Eligibility. The remaining websites (n = 78) were then categorized by type of online intervention (see Figure 1). Based on Barak and Grohol's (2011) categorization of online intervention types, websites were organized into five distinct categories: (1) online counseling and psychotherapy (n = 30), (2) psychoeducational websites (n = 19), (3) interactive, self-guided interventions (n = 18), (4) online support groups or blogs (n = 23), and (5) other (e.g., mobile applications [apps]) (n = 8). In cases where a website contained multiple intervention types (e.g., online counseling and psychotherapy and interactive, self-guided intervention), it was recorded in both categories; that is, these 78 websites collectively offered 98 different intervention types.

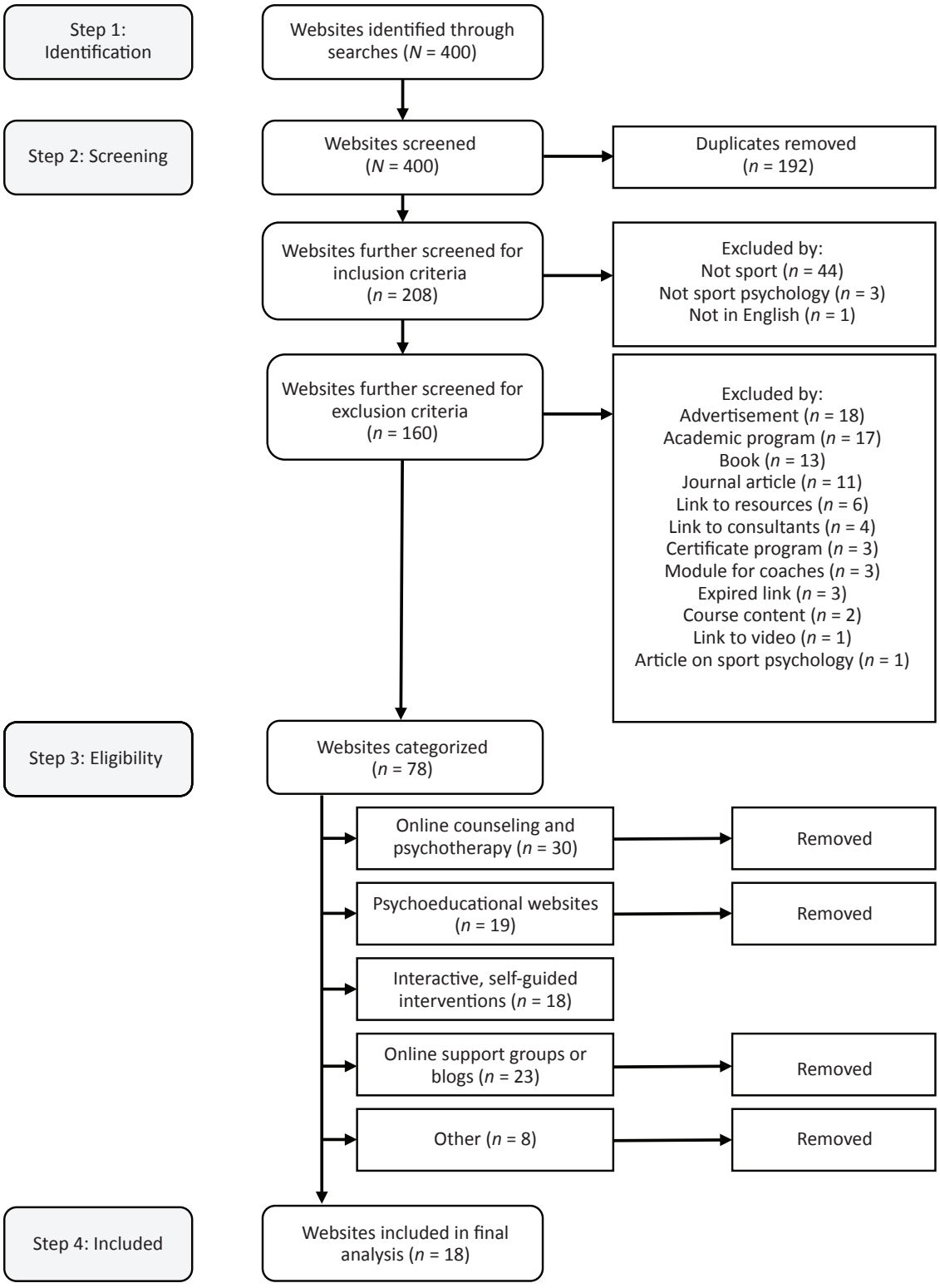
Included. Only those websites categorized as interactive, self-guided interventions (i.e., learning modules) were included in the final analysis, yielding a final sample of 18 distinct programs (see Table 2).

Table 2. URL links for websites included in final analysis

URL Link
https://amplifysportpsychology.com/athletes/
https://athletesauthority.com.au/mental-skills-training/
https://mentaltraininginc.com
https://olympics.com/athlete365/courses/sports-psychology/
https://premiersportpsychology.com
https://sport-mi.com
https://www.flowinsports.com/courses
https://www.flowperformancepsych.com/online-courses
https://www.futurelearn.com/courses/mental-skills-training-sport/2
https://www.jdcourses.com/e-learning/sports-psychology-course
https://www.learndirect.com/course/sports-psychology
https://www.learnpst.com
https://www.mentaltoughnesstrainer.com/sports-psychology-youth-sports/
https://www.peaksports.com/online-sports-psychology-training/
https://www.qpathlete.com/mental-toughness-online-course
https://www.teammentaltraining.com
https://www.udemy.com/course/applied-psychological-skills-training-for-sport/
https://www.udemy.com/course/mental-toughness-training/

Note. All links were active as of October 25, 2022.

Figure 1. PRISMA diagram of systematic process used for data collection



5. Develop Processes and Tools to Manage Search Results

Throughout the data collection process, steps were taken to manage search results and improve methodological rigor. First, two independent reviewers were used throughout the data collection process (i.e., first and third authors) (Belur et al., 2021). Both reviewers independently screened all links for inclusion and exclusion criteria, categorized websites by type of intervention, and analyzed program characteristics for all included websites (Rew et al., 2018; Shamseer et al., 2015). Any disagreements were resolved through discussion between both reviewers and a third member of the research team (i.e., second author) until a consensus was reached (Rew et al., 2018). Second, given that website content can be modified or updated quite frequently, an online screen-capturing tool (https://webpagetopdf.com) was used to capture website content electronically as of July 30, 2022, to maintain consistency. Third, tables were developed to assist the research team in the data collection process, thereby increasing transparency and mitigating biases between reviewers (Rew et al., 2018).

6. Specify Measures of Quality

A modified version of the DISCERN instrument was used to assess website quality (Charnock et al., 1999). DISCERN includes 16 items related to the reliability of the information included on the website (i.e., items 1-8; e.g., "Are the aims clear?") and the specific details on treatment choices (i.e., items 9-15; e.g., "Does it describe how each skill, strategy, or technique works?") with a final item rating the overall quality of information on the website; items 2 and 11 were not applicable to the current paper (see Figure 2 for a list of items). Items are rated on a five-point Likert-type scale, with higher scores indicating the criteria were fulfilled to a greater extent (i.e., 1 = *no*, 3 = *partially*, 5 = *yes*).

Other indicators of quality included the education and credentials of the program creator(s), the use of external references, and whether the information was reported as evidence-based. Education was recorded based on the description of the program creator(s), wherein one's highest reported degree was retained for analysis. Within the field of sport psychology, various organizations (e.g., Applied Association for Sport Psychology [AASP]) have established certifications that recognize one's knowledge of the discipline and their ability to effectively provide consultation to athletes, teams, and other performers (e.g., Certified Mental Performance Consultant [CMPC]; AASP, n. d.). If credentials related to a certification in sport psychology were provided for the program creator(s), this information was recorded. Moreover, the inclusion of references (e.g., journal articles, other websites) was reported as either 'yes' (i.e., the website provides references to support its program's content) or 'no' (i.e., no references provided). Similarly, if the website stated that the content used to create the online modules was evidence-based (i.e., based on research or empirical evidence), this was also captured with a 'yes,' whereas a 'no' was recorded if no such mention of evidence-based was provided.

7. Compute Readability

Readability relates to the consumer's ability to read and understand a website's content (Rew et al., 2018). Readability was determined using the Flesch-Kincaid Reading Ease test through an online calculator (https://www.webfx.com/tools/read-able/; e.g., Rew et al., 2018; Tahir et al., 2020). The link (i.e., URL) for each website home page (see Table 2) was inserted into the online calculator, which then generated a score for reading ease. The reading ease formula considers the average sentence length and average number of syllables per word to determine readability. This formula generates a numeric score ranging from 0-100, with higher scores representing greater readability with an optimal score of 65 or greater (0–30 = very difficult; 31–50 = difficult; 51–60 = fairly difficult; 61–70 = standard; 71–89 = easy; 90–100 = very easy; Aaronson et al., 2018; Tahir et al., 2020). The mean score for the Flesch-Kincaid Reading Ease test was 60.93 (*SD* = 7.04), with scores ranging from 47.2 (difficult to read) to 78.1 (easy to read). Most scores fell between fairly difficult to read (51–60) and standard readability (61-70).

8. Evaluate Websites

Four areas of program characteristics were described: (a) general characteristics, (b) access and audience, (c) delivery, and (d) content.

General Characteristics. The affiliation, date of publication, and date of modification were assessed for each website. Affiliation refers to the type of company or organization that hosts the website (e.g., commercial [.com], educational [.edu], organizational [.org]), as this provides the consumer clear information on a website host (or sponsors) (e.g., Stern et al., 2021). Date of publication (i.e., date website was first published online) and modification (i.e., most recent date content was modified) (Rew et al., 2018; Silberg et al., 1997) were included to document the longevity and recency of a website's content.

Access and Audience. Components of access included the cost of the program, registration options, and the use of high-speed internet. In some cases, programs offered both a packaged program (i.e., consisting of multiple modules) or individual modules (i.e., one module on a given topic); only the cost of the packaged programs was retained for analysis. Registration options were recorded under three options: individual registration, team registration, or both. In addition, given that programs are delivered online, these may require the use of, and access to, high-speed internet. Whether a program operated off the web (i.e., high-speed internet required) or if a program could be downloaded and accessed offline (i.e., high-speed internet not required) was also recorded.

The intended audience of each program was identified. This included the target audience of a program, the competitive level of this target audience, and if images of visible minorities were shown on program home pages. Target audience focused on to whom the program was designed (e.g., athletes, coaches). The competitive level of that target audience was also reported (e.g., recreational, competitive). Both target audience and competitive level were only reported if explicitly identified (e.g., our program is designed for competitive athletes). Moreover, the inclusion of visible minorities within the images embedded on websites was recorded. If a photo of a person was included on the website, our raters assessed both sex (i.e., male or female) and if a person(s) of color was included. Sex was reported as a 'yes' if an image of a female was present (i.e., 'no' for images only of males). At the same time, if a person of color was shown, this was reported as a 'yes' (i.e., 'no' for images with no person of color) (Coleman & Harrison, 2022). For both sex and visible minorities, if images contained both males and females or both visible minorities and white individuals, these were categorized as 'both.' Instances where this information was not provided or was unclear (e.g., blurry image) were omitted.

Delivery. The number of modules provided within a program and the length of time to complete the program were recorded. Further, whether a program delivered modules in a pre-determined sequence (i.e., tunneled) or if participants had the choice to pick the order one completes the program (i.e., choice) was recorded (Webb et al., 2010). Webb and colleagues' (2010) coding scheme for evaluating various modes of delivery within module-based programs was used, which includes three general sections: (a) automated functions (i.e., the types of automatically generated content or feedback provided within a module; e.g., tailored feedback; three items), (b) communicative functions (i.e., the ways a participant can interact with others within the module, e.g., access to an expert; three items), and (c) supplementary modes (i.e., the additional modes of communication included within the program, e.g., email; five items) (see Table 3). All items were coded based on whether the modules within a program appear to offer a given feature (i.e., 'yes' or 'no'). Although this scheme was developed to evaluate the content within a module (Webb et al., 2010), in the current paper, this scheme was employed to describe the information provided about what the module includes. Therefore, it is possible that modules may, in fact, include some of these features, but the description of the program does not mention them.

Content. Two areas of program content were described. These included (a) the topics related to sport psychology that are covered within a program (e.g., imagery, confidence) and (b) the target outcomes for participants following completion of a given program (e.g., enhance sport performance). Each of these content areas was assessed using a content analysis, described in more detail below.

Data Analysis

DISCERN Instrument

DISCERN was completed by two independent reviewers for all websites. Inter-rater reliability was assessed between reviewers using the weighted kappa analysis (i.e., 0 to 0.20 = slight agreement; 0.21 to 0.40 = fair agreement; 0.41 to 0.60 = moderate agreement; 0.61 to 0.80 substantial agreement; 0.81 to 1 = nearly perfect agreement). The weighted kappa score was 0.47, indicating moderate agreement between raters. Instances where scores differed between raters by two or more points were discussed until a consensus was reached (this occurred only six times out of 234 ratings), while scores within two or less points were averaged (Huynh et al., 2019). Thus, the final scores for all items were summed, generating a score between 14 and 70 for each website, with larger scores reflecting higher quality information (i.e., 14–25 = very poor; 26–35 = poor; 36–45 = fair; 46–55 = good; 56–70 = excellent) (Tahir et al., 2020).

Content Analysis

A content analysis is a systematic method to understand text-based data, allowing for the broad description of a phenomenon (Elo & Kyngäs, 2008; Hsieh & Shannon, 2005; Patton, 2002). A content analysis can be inductive or deductive. In an inductive content analysis, categories

or themes are derived from the data, whereas a deductive content analysis is structured on previous knowledge from a theory or framework (Elo & Kyngäs, 2008). Both types of analyses were employed in the current study and followed three phases: preparation, organizing, and reporting (Elo & Kyngäs, 2008). The preparation phase included pulling text segments (e.g., words, sentences) from websites that reflected either a topic related to sport psychology or a target outcome (Hsieh & Shannon, 2005); two independent reviewers completed this step. To organize the data, text segments from each reviewer were then combined for further analysis, with duplicate text segments removed. Following the collection of, and subsequent immersion in, the data, a series of deductive and inductive analyses were performed (Elo & Kyngäs, 2008; Hsieh & Shannon, 2005).

Topics Related to Sport Psychology. A deductive content analysis was first used to explore if common topics related to PST were delivered through online module-based programs. The Sequence of Basic Mental Skills (Ely et al., 2023) and the Gold Medal Profile for Sport Psychology (Durand-Bush et al., 2023) were used as frameworks to guide the deductive content analysis. The Sequence of Basic Mental Skills includes the psychological skills of goal setting, imagery, self-talk, and relaxation (Ely et al., 2023), whereas the Gold Medal Profile for Sport Psychology includes fundamental competencies (i.e., motivation, confidence, resilience), self-regulation competencies (i.e., self-awareness, stress management, emotion and arousal regulation, attentional control), and interpersonal competencies (i.e., athlete-coach relationship, leadership, teamwork, communication). These frameworks were selected due to their recency of publication, the breadth of psychological skills and competencies covered between them, and the systematic nature upon which each framework was built (Durand-Bush et al., 2023; Ely et al., 2023). Thus, sport psychology topic areas were categorized into these specific content areas. Following this deductive content analysis, not all topic areas presented within the online programs were categorized in these frameworks. Therefore, an inductive content analysis was then employed by the first author. Similar topics were grouped into categories to demonstrate patterns within the data and labeled to describe the topic in a meaningful way (Elo & Kyngäs, 2008; Hsieh & Shannon, 2005). After the development of these categories, all authors met to critically discuss and debrief the process and categories. This peer debriefing facilitated an opportunity for discussion and refinement of categories that broadly reflected these data (Hsieh & Shannon, 2005).

Target Outcomes. Given that no frameworks were used to conceptualize the potential target outcomes of these programs, an inductive content analysis was employed. This analysis followed the same process as previously mentioned, wherein target outcomes were grouped into categories and provided labels. For example, text segments detailing target outcomes such as "enhance performance" or "perform at your best" were categorized as *improve sport performance*. In addition, peer debriefing was also utilized to facilitate conversation between the three authors regarding the development of these categories (Hsieh & Shannon, 2005).

Descriptive Statistics

All other variables were analyzed using descriptive statistics. Depending on the variable, this included the calculation of means, percentages, and/or frequency counts.

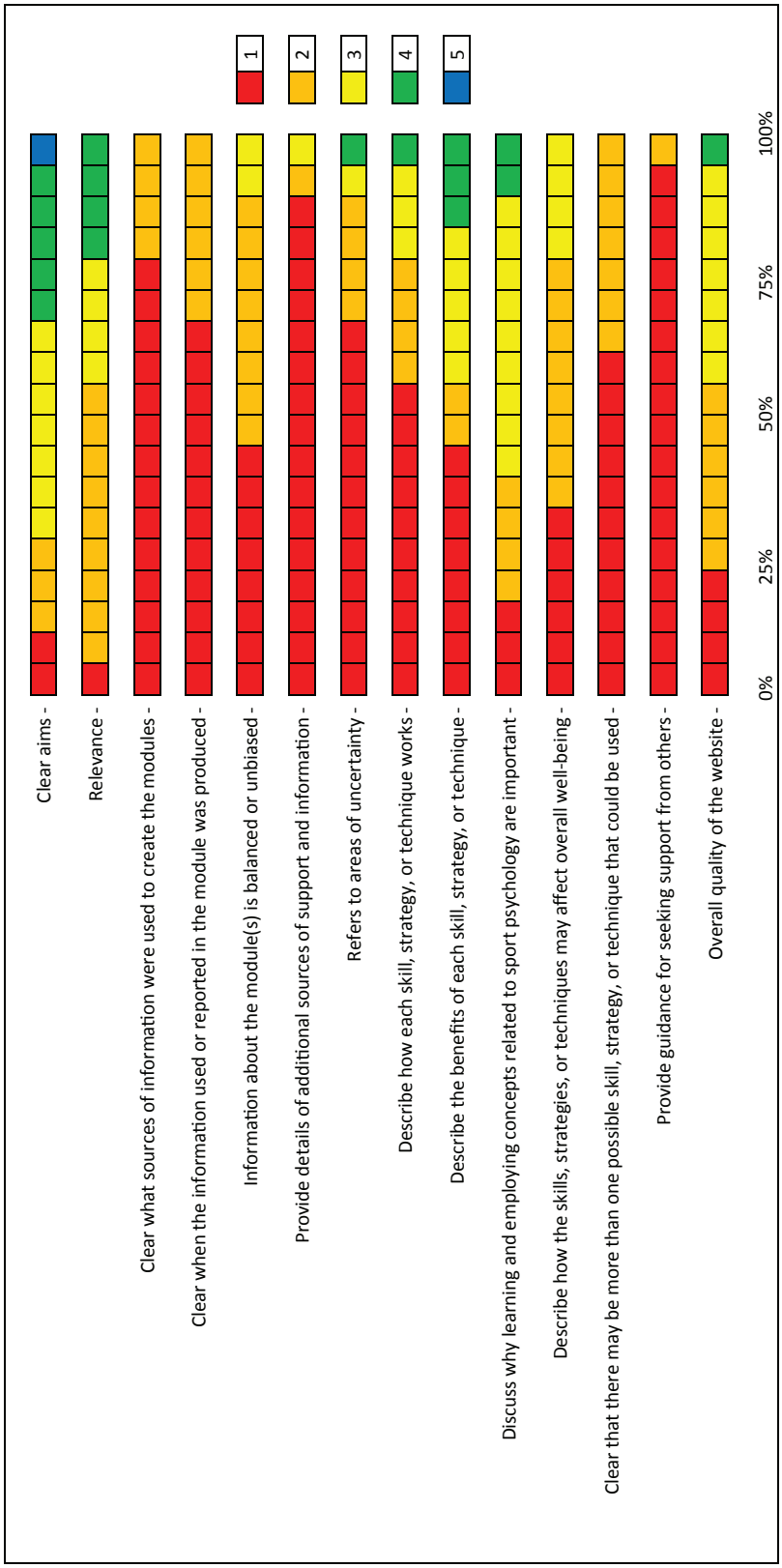
Results

Quality

The mean DISCERN score was 25.22 (*SD* = 6.26), with scores ranging from 16.5 (very poor quality) to 36.5 (fair quality). In all, ten websites (55.6%) scored in the very poor quality range (14–25), seven websites (38.9%) in the poor quality range (26–35), and just one (5.6%) in the fair quality range (36–45). Score distributions for individual DISCERN items can be found in Figure 2.

The highest level of education received by program creator(s) included those with a Doctorate in Philosophy (i.e., Ph.D., *n* = 6; 33.3%), Doctorate of Psychology (i.e., PsyD, *n* = 1; 5.6%), and Masters of Science or Arts (i.e., MS or MA, *n* = 6; 33.3%); five websites (27.8%) did not report the education for the program creator(s). A variety of credentials were listed, including CMPC (*n* = 2; 11.1%), Canadian Sport Psychology Association (*n* = 2; 11.1%), British Association of Sport and Exercise Sciences (*n* = 1; 5.6%), licensed psychologist (*n* = 2; 11.1%), sport psychologist (*n* = 1; 5.6%), and Certified Mental Trainer (*n* = 1; 5.6%); however, it should be noted that each type of credential was recorded exactly as seen on a programs website and therefore may not reflect an accredited or widely recognized certification. Most websites (*n* = 11; 61.1%) did not report any credentials for their program creator(s). Although no websites included any references, seven (38.9%) stated their content was evidence-based.

Figure 2. DISCERN Quality Scores for Online PST Programs



Note. DISCERN quality scores for the included websites (n = 18), ranging from 1 (*no/low quality*) to 5 (*yes/high quality*).

Program Characteristics

General Characteristics

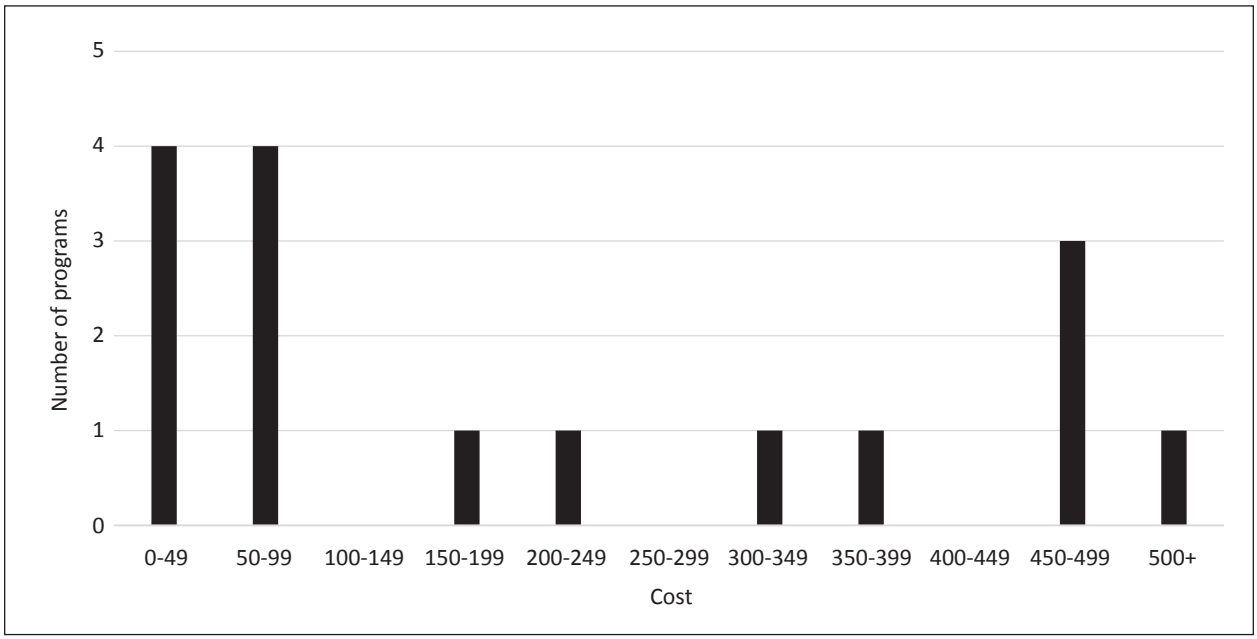
All programs (*n* = 18; 100%) included in the analysis were hosted commercially (i.e., .com). Regarding date of publication, eight were created in 2022 (44.4%), with two (11.1%), one (5.6%), and two (11.1%) created in 2021, 2020, and 2019, respectively; five (27.8%) websites did not report year of publication. One website (5.6%) was modified in 2022, whereas no other websites included a year of modification (*n* = 17; 94.4%).

Access and Audience

The cost of online PST programs ranged from $0 (free) to $697.00 (USD). The mean and median costs were $245.08 and $195.00, respectively. Although not all programs listed a cost, of the 16 programs that did, eight were between $0 – 100.00, two were $150.00 – 249.00, and the remaining six were $300.00 – 697.00 (see Figure 3). Two programs (11.1%) did not provide a cost on the website and implied this cost would be provided after initial steps toward registration were taken. Registration was available at the individual level (*n* = 10; 55.6%) or both individual and team level (*n* = 5; 27.8%); three programs (16.7%) did not provide registration options. Seemingly, all programs required access to high-speed internet (*n* = 16; 88.9%); however, for two (11.1%), this information was not available.

These programs were generally intended for athletes (*n* = 15; 83.3%) or para-athletes (*n* = 1; 5.6%); two programs did not explicitly state a target sport population. Additionally, other populations stated to benefit from these programs included coaches (*n* = 9; 50.0%), sport parents (*n* = 2; 11.1%), sport officials/referees (*n* = 1; 5.6%), exercisers (*n* = 1; 5.6%), and other performers (*n* = 1; 5.6%). Similarly, these programs were designed for (para-)athletes at various competitive levels, including all levels of sport (*n* = 7; 38.9%), high school and higher (*n* = 2; 11.1%), youth (*n* = 1; 5.6%), and elite (*n* = 1; 5.6%); seven programs (38.9%) did not include this information. Moreover, following a visual analysis of the images included on these websites, males appeared on 72.2% (*n* = 13) of websites, compared to 50.0% (*n* = 9) for females. Specifically, 44.4% (*n* = 8) included images of both males and females, 27.8% (*n* = 5) just males, and 5.6% (*n* = 1) just females; four websites (22.2%) did not show images of people or sex was not identifiable due to poor image quality. Further, 83.3% (*n* = 15) included images of white individuals, with only 27.8% (*n* = 5) showing people of color; three websites (16.7%) did not include images of people. In more detail, 55.6% (*n* = 10) included images of only white individuals, 27.8% (*n* = 5)

Figure 3. Cost distribution of Module-Based Online PST Programs



Note. All costs are listed in United States Dollars (USD).

of both white individuals and people of color, with no (0%) websites only showing people of color.

Delivery

Online PST programs varied in the number of modules included, ranging from four to 21. The mean number of modules was 8.1, with a median of 7.0; four websites (22.2%) did not include information on the number of modules within their program. It should be noted that some programs had variations regarding what was considered 'one' module, with some considering a module to be a start-to-finish lesson. In comparison, others considered a series of interactive videos to encompass one module. Only eight websites (44.4%) provided information on how long their program would take to complete. Those that did report length did so in different formats: minutes per module (n = 2), total hours (n = 4), and expected number of weeks to complete (n = 2). In cases where minutes per module were provided, this number was converted to total hours (i.e.,

Table 3. Modes of delivery within module(s) as reported on website

Mode of delivery and description	Included	
	Yes	No
Automated Functions		
Enriched information environment: Supplementary content and links, testimonials, videos, games.	*n* = 13 (72.2%)	*n* = 5 (27.8%)
Automated tailored feedback: Comparison to norms or goals (previously inputted by participant), reinforcing messages, or coping messages).	*n* = 3 (16.7%)	*n* = 15 (83.3%)
Automated follow-up messages: Reminders, tips, newsletters, encouragement.	*n* = 0 (0%)	*n* = 18 (100%)
Communicative Functions		
Access to expert: e.g., "ask an expert", expert-led discussion board, or chat sessions.	*n* = 4 (22.2%)	*n* = 14 (77.8%)
Scheduled contact with expert: e.g., emails, synchronous sessions.	*n* = 1 (5.6%)	*n* = 17 (94.4%)
Peer-to-peer access: e.g., buddy system, peer-to-peer discussion boards, forums, or live chat.	*n* = 1 (5.6%)	*n* = 17 (94.4%)
Supplementary Modes		
Email: Includes communication through email.	*n* = 3 (16.7%)	*n* = 15 (83.3%)
Phone: Includes communication through phone call.	*n* = 0 (0%)	*n* = 18 (100%)
Text: Includes communication through texts.	*n* = 0 (0%)	*n* = 18 (100%)
CD's: Includes access to CDs.	*n* = 0 (0%)	*n* = 18 (100%)
Synchronous sessions: Includes built-in synchronous sessions.	*n* = 3 (16.7%)	*n* = 15 (83.3%)

Note. Adapted from Webb et al. (2010).

minutes per module multiplied by number of modules, divided by 60). Thus, the total hours needed to complete a program ranged from 2-140, with a mean of 26.3 hours and a median of 4.3 hours. Further, the two programs wherein the expected number of weeks were provided were listed as taking one week and four to eight weeks to complete. Half of the programs (*n* = 9; 50.0%) featured a tunneled program with modules to be completed in a particular order, whereas only three (16.7%) provided participants choice as to what order to complete the modules; for six programs (33.3%), this information was not available. Last, most elements of automated functions, communicative functions, and supplementary functions were rarely included (see Table 3), apart from including an enriched information environment (i.e., providing supplementary content and links, testimonials, videos, or games) wherein 72.2% (*n* = 13) of programs appeared to include these elements.

Content

Many of the sport psychology topics covered within these programs corresponded to the psychological skills and competencies presented in the Sequence of Basic Mental Skills (Ely et al., 2023) and the Gold Medal Profile for Sport Psychology (Durand-Bush et al., 2023), respectively (see Table 4). Imagery was the most widely included psychological skill (*n* = 12; 66.7%), followed by goal setting (*n* = 10; 55.6%), self-talk (*n* = 10; 55.6%), and relaxation (*n* = 6; 33.3%). Aspects of fundamental, self-regulation, and interpersonal competencies were included within online programs. Confidence (*n* = 10; 55.6%) was the most prevalent fundamental competency, followed by motivation (*n* = 8; 44.4%) and resilience (*n* = 2; 11.1%). All four self-regulation competencies were listed as topics: attentional control (*n* = 11; 61.1%), emotion and arousal management (*n* = 7; 38.9%), stress management (*n* = 5; 27.8%), and self-awareness (*n* = 4; 22.2%). Last, interpersonal competencies were the least reported competencies, with only three programs including communication (16.7%) and teamwork (16.7%), and two including leadership (11.1%); no program promoted content on the athlete-coach relationship.

Beyond the two frameworks mentioned above (Durand-Bush et al., 2023; Ely et al., 2023), other sport psychology topics included mental toughness (*n* = 6; 33.3%), routines and preparation (*n* = 6; 33.3%), mindfulness (*n* = 5; 27.8%), recovery and training (*n* = 4; 22.2%), attitude (*n* = 3, 16.7%), flow (*n* = 3, 16.7%), growth and mastery (*n* = 3, 16.7%), optimism (*n* = 2, 11.1), and well-being (*n* = 2, 11.1). Topics that only appeared in a single program can be found in Table 4 (e.g., observational learning).

Many different target outcomes were listed for online PST programs. The most prevalent outcomes were improving sport performance (*n* = 8; 44.4%), developing mental toughness (*n* = 5; 27.8%), and improving one's mindset for sport (*n* = 5; 27.8%). Additionally, other target outcomes mentioned included holistic benefits (*n* = 4; 22.2%), managing anxiety and emotions (*n* = 4; 22.2%), building confidence (*n* = 3, 16.7%), and overcoming challenges (*n* = 2, 11.1). Several target outcomes only appeared for a single program: develop routines, getting in the zone, increase focus, learn psychological skills, and maintain composure.

Discussion

The purpose of this paper was to identify and describe sport-based PST programs available online. Following a systematic review methodology used for conducting an internet search of websites (Rew et al., 2018), 18 unique online PST programs were identified, thereby confirming that module-based PST programs in sport are available online. Each online PST program was assessed for readability and by the quality of the information provided on their website using the DISCERN instrument. Additionally, various program characteristics were recorded to broadly describe these programs. These ranged from general characteristics, such as when a program was developed, to more specific characteristics associated with access and audience, delivery, and content. These findings lay a foundation for the description of online PST programs in sport and warrant areas of future research.

By using the systematic review methodology developed by Rew et al. (2018), 18 unique online module-based PST programs were identified. This finding situates the current landscape of available online PST programs and confirms previously anecdotal accounts of their existence (e.g., Cogan, 2019; Neff & Carlson, 2016; Schneider, 2016). Indeed, the use of the eight-step systematic review methodology for identifying websites was quite helpful in this pursuit and offers a tool to track the development of this field over time. Moreover, though only module-based programs were subsequently described in the current paper, other types of online programming were also identified (e.g., psychoeducational websites; *n* = 19). Though beyond the scope of the current paper, researchers may consider describing these types of programs to expand knowledge of online programming in sport psychology more broadly (e.g., Barak & Grohol, 2011).

A unique area of interest within this study was to explore the quality of information presented regarding

each online PST program. Through the use of the DISCERN instrument, it was apparent that the quality of information provided about these programs was quite poor. Although most programs offered partially clear aims (e.g., what their program is about) and explained why sport psychology is important (e.g., benefits of sport psychology), information on where such information originated or how to find additional resources was largely absent. This lack of transparency is problematic for at least two reasons. First, the rigor and methodological nature of content generation is likely a notable difference between those with and without accredited education and training in sport psychology (Gould, 2016). Thus, if most programs lack transparency regarding their content, it is nearly impossible to evaluate one program's legitimacy over another. Second, those searching for an online PST program may want sufficient information on what a program will cover and how it will

Table 4. Distribution of sport psychology topics following deductive and inductive content analysis

Framework	Sport Psychology Topic	*n*	%
Sequence of Basic Mental Skills	Goal Setting	10	55.6
	Imagery	12	66.7
	Self-Talk	10	55.6
	Relaxation	6	33.3
The Gold Medal Profile for Sport Psychology	Motivation	8	44.4
	Confidence	10	55.6
	Resilience	2	11.1
	Self-Awareness	4	22.2
	Stress Management	5	27.8
	Emotion & Arousal Management	7	38.9
	Attentional Control	11	61.1
	Athlete-Coach Relationship	0	0
	Leadership	2	11.1
	Teamwork	3	16.7
	Communication	3	16.7
Inductive Content Analysis	Mental Toughness	6	33.3
	Routines & Preparation	6	33.3
	Mindfulness	5	27.8
	Recovery & Training	4	22.2
	Attitude	3	16.7
	Flow	3	16.7
	Growth & Mastery	3	16.7
	Optimism	2	11.1
	Well-being	2	11.1
	Assessment	1	5.6
	Conflict	1	5.6
	Emotional Intelligence	1	5.6
	Fear	1	5.6
	Feedback	1	5.6
	Getting in the Zone	1	5.6
	Identity	1	5.6
	Mental Skills (broadly stated)	1	5.6
	Observational Learning	1	5.6
	Perspective	1	5.6
	Professionalism	1	5.6

Note. Topic could be content of an entire module or presented within a given module; *n* represents the number of programs to include that topic.

be delivered before registering. If this information is not provided or is unclear, perhaps they will move on to a new program or give up their pursuit of PST altogether. Interestingly, though over 70% of these programs were created by individuals with graduate-level education in (sport) psychology, the low DISCERN scores across programs suggest the need to give deliberate attention to the information used to promote a program. With at least 12 of the 18 programs created following the onset of the COVID-19 pandemic, it is possible that many who created these programs were pivoting from in-person to online programming. As researchers have noted the extensive knowledge of both education and technology (not to mention sport psychology) needed to sufficiently create an online PST program (Farres & Stodel, 2003; Weinberg et al., 2012), perhaps creators would have benefitted from extra training in these areas. Thus, it is possible that the low DISCERN scores reflected creators' limited training or knowledge on how to promote their program, as opposed to a lack of content knowledge.

Several findings provide insight into who these programs were designed to serve. It was encouraging that most online module-based PST programs were framed for athletes of all competitive levels, demonstrating the potential for non-elite athletes to access PST (Farres & Stodel, 2003; Weinberg et al., 2012). Nevertheless, almost 40% of programs did not indicate which athlete populations their program was designed for, which could undermine the proportion of available programs intended for all athlete populations. With a host of barriers to in-person PST (e.g., limited consultants, logistical challenges; Martin, 2020; Weinberg et al., 2012; Wylleman & Lavallee, 2004), it is important that online PST programs are available to all athletes. This could involve general programs that aim to provide online PST to as many athletes as possible. Another approach is to design online modules for specific athlete populations. For example, programs may be tailored specifically for youth athletes or other underserved athlete populations (e.g., para-athletes; Bastos et al., 2020). Along the lines of inclusion, programs' home pages predominantly included images of white and male athletes compared to females and visible minorities. Researchers in sport psychology have discussed the need to advocate and include programming for athletes of diverse populations (e.g., Bejar et al., 2022; Krane & Waldron, 2021; Schinke et al., 2019). Schinke and colleagues (2019) discussed the importance of practitioners taking steps to become educated and aware of diversity and the role they play in facilitating positive experiences with their athletes. Online PST programs may not include the one-on-one nature of traditional PST in sport psychology; however, the practitioner (or creator of the program) can still ensure the athlete feels safe and supported in this environment (Barazzone et al., 2012). Although such aspects may largely be dependent on interactions while participating in the online PST program itself, ensuring that all elements of a program (e.g., including home pages) create and maintain such a connection is important to fostering inclusion for all athletes.

Program characteristics related to cost and internet access may also impact who can access these programs. Although eight programs featured costs of $100 or less (i.e., the low-end rate of in-person PST; Neff & Carlson, 2016; Weinberg et al., 2012), six programs were $300 or more, suggesting that whether an online module-based PST program is more cost-effective than in-person PST is dependent on the program. With such variations in cost, it would seem consumers (e.g., athletes, parents, coaches) may need to conduct a more thorough search of programs and compare various price points to find one that works with their budget. In addition to the cost of the program itself, it appeared all programs required access to high-speed internet; that is, the program cannot be downloaded and completed without the internet. This could present a barrier for athletes to access these programs. For example, a 2019 survey of over one hundred million households in the United States showed that 32% of households were without a computer with high-speed internet; those living in rural communities or those of various minority groups (e.g., Hispanic, Black) were significantly more likely to be without internet compared to those living in metropolitan areas or who were white (Curtis et al., 2022). Regarding online PST programs, it may be advantageous to consider avenues for offering downloadable programming that may be more accessible for athletes within these populations.

There was great variability in how modules were delivered. For instance, the average number of modules per program was eight, however, this ranged from four to 21. Further, although the length of time required to complete a program was often omitted, when this was provided, it also varied drastically between programs. Such discrepancies raise questions regarding the ideal number of modules or program length. On the one hand, offering more modules could be viewed as favorable, given that a wide variety of content areas could be presented. For example, Driska (2018) found that coaches had favorable impressions of a coach education program that contained roughly two hours of content spread over a series of modules. On the other hand, a shorter program could help maintain interest and, in turn, program adherence (e.g., Beatty & Binnion, 2016).

Researchers in online education have noted that online learning in shorter durations (e.g., less than 11 minutes) and incorporating interactive activities lead to higher completion rates (Geri et al., 2017). In regard to online modules for PST, such answers are at the intersection of what athletes desire and what practitioners aim to provide. In addition, information on specific within-program delivery modes (e.g., communicative functions; Webb et al., 2010) was largely absent from program home pages. Although such features may appear within the program itself, providing information on these interactive elements could help promote the program to athletes, parents, and coaches (Beatty & Binnion, 2016; Farres & Stodel, 2003; Weinberg et al., 2012).

Many of the topic areas within sport psychology associated with these programs aligned with common psychological skills and competencies (Durand-Bush et al., 2023; Ely et al., 2023). Imagery was the most prominent topic mentioned, which is not surprising given its empirical support and practical application (Cumming & Williams, 2013; Munroe-Chandler & Hall, 2021). With goal setting and self-talk also listed quite frequently, it appears online PST programs are adopting many basic mental skills, all of which lay the foundation for the development of more complex skills (Ely et al., 2023). Fundamental and self-regulation competencies of the Gold Medal Profile for Sport Psychology (Durand-Bush et al., 2023) were also oft-mentioned, signaling the breadth of content areas presented across programs. Moreover, although improving sport performance was the most common target outcome (Barker et al., 2020), a host of other outcomes were mentioned without much consistency. Together, it appears more deliberate attention should be placed on identifying specific target outcomes and offering greater transparency on how certain psychological skills and competencies contribute to achieving such aims.

Limitations

There are several limitations to this study that should be addressed. First, it is possible that other online PST programs exist beyond those identified in the current study. Using additional search terms or going beyond the first 25 'hits' may have identified other programs to include. Second, although information related to online PST programs was assessed, no learning modules associated with these programs were reviewed as part of this process. In clinical psychology, researchers have examined specific programs by engaging in the program itself to assess various design and delivery elements (Barazzone et al., 2012; Webb et al., 2010). As those programs had already demonstrated clinical effectiveness, such insights were used to explain why programs were effective. In the landscape of online PST programs in sport, no such effectiveness trials have been conducted; thus, the present study focused on the description of online PST programs more broadly. Third, although information on program content or delivery may have been limited to program home pages, it is possible such information is, in fact, presented within the program itself. Thus, these findings do not insinuate that these programs lack this information within their program but rather demonstrate the lack of transparency on program home pages. Fourth, visual analyses of sex and visible minority status were based on physical appearance and, therefore, were not intended to assess these individuals' identified gender or racial group. Although this is a limitation to conducting a visual analysis based on physical appearance, doing so aligns with the scope of this paper, wherein only information available to the consumer was assessed. By including information on sex and visible minority status, these findings contribute to the discussion around equity, diversity, and inclusion within sport psychology research and practice. Fifth, no between-program analyses were conducted. Such insights could be useful to describe if programs of higher or lower cost differ in terms of what is included within a program, among other comparisons. Finally, sport psychology topics were only described by the information available on program home pages, which does not account for additional topics that may be provided within the modules themselves or how these topics are taught.

Future Directions

The descriptive nature of this research provides many opportunities for future research. With 18 online PST programs identified, there is a great need for researchers to evaluate the effectiveness of such programs (Farres & Stodel, 2003; Weinberg et al., 2012). Little is known concerning the success of achieving the program's aims or if they help athletes acquire information on PST. Before more detailed exploration into program-specific features can be conducted (e.g., Webb et al., 2010), it is imperative to understand if online PST programs are a sufficient tool for athletes to pursue PST online. In addition, the current systematic review methodology (Rew et al., 2018) and the use of the DISCERN instrument (Charnock et al., 1999), to our knowledge, are new to the area of sport psychology. Researchers may consider using such approaches to evaluate the quality of websites that disseminate information on sport psychology to help extend knowledge mobilization initiatives (Graham et al., 2006). Last, information present on the home pages

of online PST programs appears to both serve as an educational resource and marketing tool for potential consumers (Farres & Stodel, 2003). Research exploring what information is of interest to athletes and other sport stakeholders would be useful to optimize such programs moving forward.

Practical Implications

The identification and description of online module-based PST programs is of practical importance to numerous sport stakeholders. Athletes and coaches should be made aware that these programs exist and are available online. Although there is a need to evaluate these programs for their effectiveness, the availability of such programs offers another avenue for athletes and coaches to pursue PST. Findings related to program characteristics will certainly be of interest to practitioners interested in developing or improving an online PST program. Although great effort likely goes into the development of the modules themselves, perhaps equal weight should be put towards providing quality details on the program on their website. This could be thought of as the first 'rapport builder' between practitioner and athlete and may have implications for whether someone will engage in a program or not. Finally, given the complexity of developing online learning modules, practitioners may benefit from collaborating with a multidisciplinary team to create such a platform. For instance, this may include practitioners in clinical psychology who have developed self-help programming or educational learning specialists familiar with the use of such technology.

Conclusion

In this paper, online module-based PST programs were identified and described. Using a systematic review methodology to conduct an internet search of available online PST programs, 18 unique programs were found and subsequently described. Overall, indicators of quality suggest that the information presented on each website was poor, despite over 70% of the programs being created by individuals with graduate-level education in (sport) psychology. Moreover, various program characteristics were described, with variables categorized as access and audience, delivery, and content. In general, most online module-based PST programs were framed for athletes of all competitive levels, varied in program length, and promoted the inclusion of many well-established psychological skills and competencies within the program. This study offers a descriptive account of online PST programs, introduces a unique methodology to sport psychology research, and outlines many areas for future research. Most notably, this research highlights the need for further investigation into the effectiveness of online PST programs and exploration into what information athletes want to see on program home pages..

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