

Controlled Evaluation of a Sport-Specific Performance Optimization Program in a Biracial Black and White Athlete Diagnosed with Social Anxiety Disorder and Agoraphobia

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Abstract

There are a very limited number of sport-specific mental health and sport performance interventions available for athletes of color. This study examined The Optimum Performance Program in Sports (TOPPS) in a biracial adolescent athlete who was diagnosed with Agoraphobia and Social Anxiety Disorder. A multiple-baseline across behaviors case trial design was used to evaluate outcomes. A battery of psychological measures specific to mental health and sport performance was administered at baseline, post-intervention, and a 3-month follow-up. Social skill sets (i.e., positive assertion and negative assertion) were systematically targeted sequentially in a virtual format using HIPAA compliant video-conferencing technology to safeguard against contracting COVID-19. Results demonstrated improvement in negative and positive assertion skills when targeted by the intervention. Severity of concurrent symptoms associated with Social Anxiety Disorder and Agoraphobia Symptoms, general psychiatric functioning, relationships with coaches, teammates and family, and factors interfering with sports performance improved from pre- to post-intervention. These improvements were maintained at the 3-month follow-up. Athlete ratings indicated their satisfaction with TOPPS was high, and intervention components were implemented with high integrity.

Keywords

agoraphobia, social anxiety disorder, athlete, treatment, clinical trial

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I. Theoretical and Research Basis for Treatment

Anxiety disorders affect more than 30% of adolescents between the ages of 13–17 years (Kessler et al., 2012). Black children may be particularly vulnerable to the negative impact of anxiety disorders because they are underserved regarding mental health services (Alegria et al., 2010), and few studies have examined whether evidenced based intervention are effective for reducing anxiety in Black youth. Ginsburg and Drake (2002) reported that CBT for anxiety disorders implemented in school settings effectively reduced anxiety symptoms in low-income Black adolescents. They suggest integration into school settings increased access to services. Ferrell et al. (2004) found that Black and White youth benefitted equally from a behavioral approach to treat anxiety from pre- to post-treatment and at 6-month follow-up. Small sample size, which limits generalizability of findings from these studies, was at least in part due to difficulty engaging the participants and their families in treatment. Neal and Turner (1991) suggest persistent racial prejudice and financial hardship influence how Black families conceptualize anxiety (i.e., an adaptive response to stress) and their decision to engage in treatment. These findings underscore the importance of developing culturally sensitive and engaging treatments.

Integrating culturally sensitive evidence-based interventions with sport may be one way to increase engagement in treatment for a number of reasons. Some athletes may respond better to treatment when it is framed within the context of performance optimization rather than treatment of a “disorder” (Donohue et al., 2018). Also, cognitive behavioral therapies may be well suited for within the context of sports, given the range of inherent components that overlap with sport: structure, direction, practice (homework), goal setting, and self-reliance (Ginsburg & Drake, 2002; Walton et al., 2021). Further, adolescent athletes may be more interested in CBT interventions that address sports performance (Schinke et al., 2017), which may encourage greater interest in practicing therapeutic skill sets in a real-world context. Stillman et al. (2016) also emphasized the importance of family therapy for youth athletes, citing the role of parents in their child’s support or stress. Therefore, given the benefits of sports activities for Black adolescent athletes, a sports-specific intervention aimed at optimizing sports performance and mental health, as well as the inclusion of significant others, may be beneficial to increasing Black adolescent athletes’ engagement and accessibility.

The Optimum Performance Program in Sports (TOPPS) is a sport-specific intervention adapted from Family Behavioral Therapy (FBT; Azrin et al., 1994) to concurrently address athletes’ sports performance and mental health (Donohue et al., 2021) through cognitive behavioral skills (Donohue et al., 2018). TOPPS includes significant others (e.g., peers, family, coaches, and teammates) who provide insights, encourage goal setting, model skills, and reinforce optimal thinking and behaviors. Significant improvements in collegiate athletes’ relationships with coaches, family and teammates and psychiatric functioning, and decreases in alcohol and illicit drug use and interferences with sports performance have been observed up to 8 months post-intervention in TOPPS clinical trials (Chow et al., 2015; Donohue et al., 2020; Donohue et al., 2015; Galante and Donohue, 2019; Gavrilova et al., 2017; Pitts et al., 2014), and in one randomized controlled trial, as diagnostic severity increased TOPPS became increasingly effective relative to campus counseling in collegiate athletes who were assessed for various mental health disorders; most often evidencing substance use, anxiety, and mood disorders (Donohue et al., 2018). TOPPS has demonstrated similar improved outcomes in an uncontrolled case trials involving racially diverse adolescent athletes presenting with social anxiety, depression, and oppositional defiant disorder (Donohue et al., 2021; Phrathep et al., 2021, 2022) up to 1-month follow-up. The present study examined the initial efficacy of TOPPS for improving mental health, athletic performance, and relationship outcomes for a biracial adolescent athlete diagnosed with social anxiety disorder and agoraphobia. TOPPS was provided via video-conferencing to decrease transmission of COVID-19 from the provider to client.

2. Case Introduction

The participant is a 14-year old Black and White cisgender male middle school club baseball player who was referred to TOPPS by his head coach due to his “shyness” during baseball practices. He met the following inclusion and exclusion criteria: (a) participating in organized sports, (b) between 12 and 17 years of age, (c) enrolled in a middle or high school in the United States, (d) not involved in counseling, and (e) not diagnosed with schizophrenia.

3. Presenting Complaints

During the intake assessment, Cedric (not his real name) reported struggling with shyness in school, sport, and family settings. Cedric reported a frequent inability to speak for himself, which negatively impacted his performance in school, sports, and ability to build relationships with new peers. In sports, Cedric said that he had difficulty asking for help from coaches and connecting with his teammates due to his shyness. Similar to his difficulty asking for help from his coaches, he also mentioned having trouble asking for help in school on assignments. He stated that because of these issues, he became reliant on his mother or other authority figures to speak for him or accompany him in situations where he would be left alone. He reported being aware of how his shyness was negatively impacting his academics, athletic performance, and relationships and emphasized wanting to increase his confidence and assertiveness in social interactions.

4. History

At the time of intake, Cedric was living with his mother and younger sister. His father is a traveling laborer who often relocates for months, while his mother is a stay-at-home mom. Cedric’s mother reported that her son experiences extreme shyness in various settings (e.g., sports, school, and public). She stated that his shyness might be modeled after her and Cedric’s father’s anxieties about social interactions. His mother also said that Cedric has never had any mental health treatment in the past and that such issues were typically managed within the family. Cedric discussed his experiences with shyness, which included being unable to ask a librarian to assist in locating a book, walking from the car to the baseball field alone, asking for an item at the grocery store, and asking a teacher for assistance with an assignment.

5. Assessment

Diagnostic Assessment

Kiddie – Schedule for Affective Disorders and Schizophrenia for School Children Aged 6 to 18 years old DSM-5 (K-SADS; Kaufman et al., 2000). This K-SADS was used to diagnose Diagnostic and Statistical Manual of Mental Disorders (5th ed) mental disorders. It has high inter-rater agreement, test-retest reliability, and concurrent validity.

Primary Outcome Measures

A trained assessor administered a comprehensive assessment battery 1 week before intervention (baseline), 4 months post-baseline (post-intervention), and 7 months post-baseline. A sub-set of measures were administered consistent with the multiple-baseline across behaviors methodology (Barlow & Hersen, 1988). The assessment battery included:

The Symptoms Check-List-90-Revised (SCL-90-R) (Derogatis, 1986). The SCL-90-R was used to assess general psychiatric symptoms. It has been normed on adolescent populations and demonstrates acceptable internal consistency and test-retest reliability (Preti et al., 2019).

Secondary Measures

Sport Interference Checklist (SIC) (Donohue et al., 2007b). This 40-item measure includes three inventories used to assess factors that interfere with sports training (Problems in Sports Training Scale; PSTS), sports competition (Problems in Sports Competition Scale; PSCS), and life outside of sports (Problems with Life Outside of Sports; PLOS). The SIC has high to excellent internal consistency and convergent validity (Donohue et al., 2007a, 2007b) and scores predict psychiatric symptom severity in collegiate athletes (Donohue et al., 2019).

Timeline Follow-Back interview (TLFB) (Sobell et al., 1996). TLFB uses a calendar with pre-recorded anchors to assist in retroactive reporting of alcohol and non-prescribed drug use frequency, as well as the number of days attending school and sports practice. The TLFB has good test-retest reliability and concurrent validity (Donohue et al., 2004).

Youth Self Report 11-18 (YSR) (Achenbach, 1991). This 112-item measure assesses adolescents' competencies and problem behaviors. The YSR has demonstrated acceptable internal consistency, test-retest reliability, and content validity.

Beck Depression Inventory-II (BDI-II) (Beck et al., 1996). The BDI-II was used to assess depressive symptoms. It has high internal consistency, test-retest reliability, and concurrent validity.

Student Athlete Relationship Instrument (SARI) (Donohue et al., 2007a). This 63-item measure assesses sport-specific problems in relationships with families, coaches, teammates, and peers. It has high internal consistency, criterion-related validity, and predicts psychiatric symptom severity in collegiate athletes (Donohue et al., 2007a, 2007b; Hussey et al., 2019).

Overall Happiness with Family, Coaches, Teammates, and Peers (Donohue et al. 2007a). This 4-item measure utilizes a 0 to 100 percentage scale of happiness (0 = completely unhappy, 100 = completely happy) to assess overall happiness with coaches, teammates, family, and peers. These scales have acceptable criterion-related validity (Hussey et al., 2019).

Client Satisfaction Questionnaire-8. (CSQ-8) (Larsen et al., 1979). This 8-item (4-point response scale) questionnaire evaluates quality of services received and has demonstrated high internal consistency and concurrent validity (Kelly et al., 2017).

Suicide Probability Scale (SPS) (Cull & Gill, 1982). The SPS assesses suicidal risk/ideation. It has acceptable internal consistency and predictive validity for suicidal attempts and self-destructive behavior.

Pre-intervention Assessment Results. Cedric met DSM-5 criteria for Social Anxiety Disorder and Agoraphobia based on the KSADS. Table 1 includes Cedric's responses to the mental health-related measures. He scored above clinical thresholds on SCL-90-R phobic anxiety, with borderline clinical elevations on Anxiety, Somatization, and the Global Severity Index. Table 2 includes Cedric's responses to the sports performance-related measures. His SIC and SARI scores indicated that his sports performance is a relative strength compared to his mental health.

Study Design

A multiple-baseline across-behaviors experimental design was used to assess the effects of specific intervention components related to Cedric's anxiety-related symptoms and positive and negative assertion skills (Barlow & Hersen, 1988). Behaviors were monitored immediately before each meeting using probe assessments (see Appendix) and subscales from the SCL-90-R were administered at each probe (Figure 1). It was predicted that Cedric's positive assertion skills (i.e., requesting something desired), as assessed in probe sessions, would improve once targeted in week three, while his positive assertion skills (i.e., responding to an aversively perceived situation)

Table 1. Pre-, Post- and Follow-up Assessments of Mental Health.

Scale	Pre- Intervention	Post- Intervention	Follow- Up	Post-Intervention RCI	Follow-Up Intervention RCI
SCL-90-R					
Psychoticism	59	37	37		
Obsessive- compulsive	58	37	37		
Paranoid ideation	56	35	35		
Interpersonal sensitivity	58	38	38		
Anxiety	69	35	35	2.72*	2.72*
Phobic anxiety	74	61	59	2.10*	2.56*
Depression	59	33	33		
Hostility	54	35	35		
Somatization	60	37	35	1.99*	2.01*
Global severity index	63	36	35	2.67*	2.81*
Timeline follow back					
Alcohol/drugs total	0	0	0		
Youth self-report					
Activities	44	46	46		
Social	46	40	40		
Total competence	45	41	41		
Anxious/ depressed	50	50	50		
Withdrawn/ depressed	50	50	50		
Somatic complaints	50	50	50		
Social problems	53	50	50		
Thought problems	50	50	50		
Attention problems	50	50	50		
Rule-breaking behavior	50	50	50		
Aggressive behavior	50	50	50		
Internalizing problems	43	35	32		
Externalizing problems	35	30	30		
Total problems	37	24	24		
BDI-II					
Total score	1	1	1		
Suicide probability scale					
Probability score	10	10	10		

Note. SCL-90-R = symptom check-list-90-revised; BDI-II = beck depression inventory-II. Reliable Change Index (RCI) > 1.96 is considered significant. Significant RCIs are signified with an asterisk*.

Table 2. Pre, Post-, and Follow-up Assessments of Factors Interfering with Sport Performance.

Scale	Pre-Intervention	Post-Intervention	3-Month Follow-Up
Sport interference checklist			
Training total score	47	41	41
Competition total score	46	42	42
Outside sport total score	48	43	40
Student athlete relationship instrument			
Teammates total score	19	18	18
Family total score	19	20	16
Coaches total score	23	19	19
Peers total score	14	10	10
Overall happiness with family, coaches, teammates and peers			
Family	100%	100%	100%
Coaches	100%	100%	100%
Teammates	100%	100%	100%
Peers	100%	100%	100%

would demonstrate minimal improvements. Cedric's negative assertion skills were predicted to improve once this skill set was targeted in week six and his positive assertion skills would be maintained throughout his negative assertion skills training. Lastly, Cedric's symptoms assessed by the SCL-90-R were predicted to improve across time.

6. Case Conceptualization

Cedric's experiences of worry and fear of being judged in social situations were conceptualized as contributing to his maladaptive behaviors (e.g., avoidance of fearful situations, having adults speak for him). He also reported maladaptive thinking patterns related to social situations (e.g., "I don't want to embarrass myself," "I don't know what to say," "I'm unable to speak for myself," and "I'm too shy") which, when combined with his lack of communication skills, undermined his confidence in interacting with others, especially new people, despite wanting to talk to others. In addition to social anxiety, Cedric described fears related to being in crowds, walking to a location alone, and being left at home alone. Maladaptive behaviors related to these fears included avoiding fearful situations or always being accompanied by an adult. Cedric experienced maladaptive thoughts (e.g., "Something bad is going to happen to me if I'm alone" and "I feel helpless if something happens when I'm alone"). Cedric and his mother reported onset of these symptoms during elementary school and they impair his athletic performance, academic performance, and interpersonal relationships. His mother reported "stepping in" for him when he avoided conversations, thus inadvertently negatively reinforcing his avoidance behavior (Frick et al., 1992). These behaviors and thinking patterns were consistent with diagnoses of social anxiety disorder and agoraphobia (American Psychiatric Association, 2013).

7. Course of Treatment and Assessment of Progress

Cedric completed 11 one-hour TOPPS meetings. TOPPS interventions followed the same principles, therapeutic style, and overarching procedures described by Donohue et al. (2021). Cedric involved multiple significant others in his meetings, including his mother, father, coach,

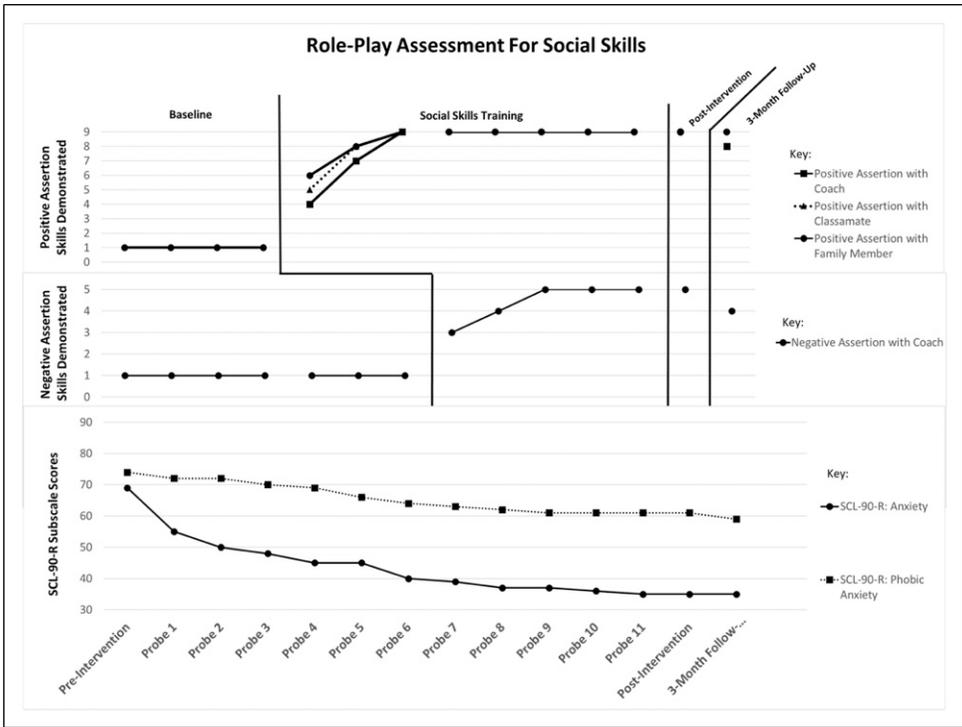


Figure 1. Role-play assessment for social skills.

and sister. Performance optimization was aimed at communication skills training and other cognitive and behavioral techniques (e.g., objective thinking, perspective-taking, focusing on the task at hand rather than outcomes, thought stopping, solution generation, positive imagery, social skills specific to positive assertion and responding to upset, and recognition of antecedent triggers to undesired behavior). Supportive others were taught to reinforce desired behaviors, particularly those that were associated with exposure to anxiety provoking performance situations, while ignoring undesirable ones. Cedric and his mother completed a hierarchy of increasingly higher anxiety provoking performance situations, and each week he was prescribed to participate in one of the anxiety provoking scenarios starting from least to most anxiety provoking (see Table 3). Cedric was also taught to effectively to use problem-solving and diaphragmatic breathing. The following sections provide summaries of each performance meeting, including who was present.

Performance Orientation (Meeting 1; Cedric and mother). During Meeting 1, a standardized Program Orientation was conducted to provide an overview of the program, discuss expectations, and gather information regarding the referral. Education was provided to Cedric and his mother about how including various significant others has been evidenced to have a positive impact on program outcomes (Gavrilova et al., 2022). Subsequently, Cedric and his mother discussed potential significant others to involve in future sessions (e.g., coach, sister, and father). The Performance Timeline component was implemented. First, a performance scenario was generated (i.e., time management in completing academic assignments). Cedric then chose a time period that was reported to be most impactful in regard to the performance scenario (e.g., seconds, minutes, or days before or after the performance scenario). Cedric then selected from a list of options which factors contributed to optimum performance in the performance scenario (e.g.,

Table 3. Anxiety Hierarchy with Pre-Assignment and Post-Assignment Ratings.

Situation	Pre-Assignment Anxiety (1–10)	Post-Assignment Anxiety (1–10)
Asking the librarian for a book	10	3
Performing in front of new people	10	5
Walking up to a group of new people	10	5
Asking someone where a room is in a new place	8	5
Asking coaches how you can improve after making a mistake	7	3
Asking employee for something in isle	6	2
Asking teacher for missing work if you were absent	5	2
Asking sister's coach if they would like help with practice	5	2
Asking coach where equipment is	4	2
Asking the office to print papers	4	2
Asking a classmate that you're not close friends with for help on an assignment	4	2
Asking mom for something	3	2
Asking your teacher a question about assignment	3	2
Ask a friend to help on an assignment	2	1
Ask friend's parent for something to do	2	1
Ask sister if she would like help with softball	1	1
Asking sister if she would like help with her homework	1	1

thoughts, routines, and nutrition). Optimum strategies to enhance the selected factors were generated, and he practiced behaviors and rehearsed objective thinking patterns. Cedric, his mother, and the provider generated goals from the Performance Timeline, such as establishing a routine prior to the performance scenario, utilizing a calendar, optimizing phone use (e.g., limiting distracting phone applications and setting reminders to complete tasks), and practicing optimal motivational statements (e.g., “I’m going to dominate”).

Performance Planning (Meeting 2; Cedric and mother). Cedric and his mother ranked each intervention in order of priority. The provider then tailored the intervention plan to be consistent with Cedric’s goals, reflecting the following order from highest to least priority: positive request, goal inspiration, self-control, performance timeline, environmental control, appreciation exchange, discussion about choice culture, and dream job development. The interventions were implemented successively and cumulatively. That is, following the initial implementation, each intervention was reviewed in additional meetings for less time as targeted skills were optimized. The order of implementation was modified slightly in some Meeting Agendas based on life events that made certain interventions more relevant than others.

Dynamic Goals and Rewards (Meetings 2–11; Cedric, mother, coach, father, and sister). The second meeting focused on reviewing pre-intervention assessment results from the SIC to identify Cedric’s strengths and goal-worthy items in preparation for establishing goals in the Dynamic Goals and Rewards intervention. His dynamic goal domains were related to maintaining optimum health (mental strength & stability), relationships with others, effort in school-related activities, and effort in sports/exercise performance. Within each goal domain, Cedric recorded general goals. His initial goal related to maintaining optimum wellness included eating well-balanced meals. Specific goals initially developed for maintaining optimum relationships with others included uplifting teammates during practice, spending quality time with friends and family, and expressing appreciation to others. Specific goals for maintaining optimum effort in

school-related activities included creating study guides/practice assignments, requesting assistance from teachers when necessary, organizing his schedule to turn in assignments ahead of time, and researching admission standards (e.g., GPA and standardized test scores) to get into college. Lastly, dynamic goals initially developed for maintaining optimum effort in sports-related activities included injury prevention, practicing breathing, maintaining a consistent training routine, and seeking assistance from coaches with skills when necessary. To reward Cedric's efforts in attempting to accomplish goals, his mother agreed to praise, go out to eat, and purchase video games as potential rewards for achieving future goals.

Cedric, his mother, and the provider also developed a hierarchy of progressively greater anxiety provoking situations. The least anxiety provoking situation was asking his sister if she would like help with her homework, and the greatest anxiety provoking situation was asking the librarian for a book. Also, he ranked the situations in the hierarchy on an anxiety scale from 1 to 10 (1 = not anxiety provoking, 10 = extremely anxiety provoking). Each week he attempted to participate in one of the situations, and during the subsequent week he reported to the provider his thoughts and actions before, during, and after completing the respective assignment. He reported his thoughts and actions that were optimally performed during the assignment completion (based on his skills, resources, and task demands at the time). These reviews occurred during the mental wellness domain of Dynamic Goals and Rewards. The provider sometimes challenged Cedric to "optimize" thoughts and actions.

Positive request (Meetings 3–4; Cedric and mother). The Positive Request intervention was utilized to teach Cedric how to make requests respectfully and skillfully. The provider first modeled the Positive Request steps for Cedric, and then Cedric engaged in role-playing scenarios with his mother. Examples included approaching his mother, coach, teacher, and classmates for help. In addition, Cedric reviewed optimal behaviors and actions while conducting the positive request in various scenarios outside of meetings, such as asking his teacher for an extension on a task, asking his coach for help, or asking for a favor from his mother.

HEARD (Meetings 5–8; Cedric and mother). The HEARD (Hear, Empathize, Ask, Review, Decide) intervention was implemented to help Cedric learn how to respond to feedback from others. Similar to the steps for positive request, the provider modeled the HEARD steps for Cedric, and then engaged in role-playing scenarios with him and his mother. Examples included responding to upset from coaches, responding to constructive criticism from teachers, and responding to frustrated teammates. After the initial HEARD meeting, Cedric and the provider reviewed how he optimally implemented the HEARD skill outside of meetings, such as responding to his coach's feedback at practice and during competitions.

Goal Inspiration (Meeting 4; Cedric and mother). Goal Inspiration focuses on the positive consequences of achieving goals to build motivation to achieve goals (Donohue et al., 2014). Cedric reviewed his goal of creating practice assignments and study guides for school. Cedric, his mother, and his provider collaboratively brainstormed immediate and delayed positive consequences that would arise from creating his practice assignments and study guides. For example, Cedric initially expressed that maintaining optimum hydration would increase mastery in his subjects. He said that increased mastery in his academic subjects would increase the likelihood that he would perform well on quizzes/exams, chances of obtaining a scholarship, chances of being admitted into a prestigious college, increase his confidence in school, and positively impact his sports performance due to less concerns about academic performance. He reported that the sequence of generating additional positive consequences for achieving his goal increased his overall inspiration to create practice assignments and study guides.

Self-Control (Meetings 5–8; Cedric, mother, and coach). Self-Control (SeC) was implemented to teach him how to recognize and manage antecedents or "triggers" to anxiety (e.g., thoughts, images, feelings, and behaviors) that lead to undesired, impulsive behaviors and

thoughts. Through backward chaining (Donohue et al., 2014), Cedric learned to identify causes of undesirable behaviors. For example, a chain of behaviors and thoughts for leaving a party due to anxiety might be seeing a girl who is perceived to be good looking, thinking that he will do something embarrassing, thinking the embarrassing action will lead to being teased, and deciding to leave the party. Recognizing the initial thought in this chain of events (e.g., first perception the girl is perceived to be attractive) makes it easier to perform actions and thoughts that are incompatible with leaving the party (i.e., thought stopping/focus statements, reviewing consequences, and relaxation strategies/diaphragmatic breathing). Cedric chose to practice SeC to assist his anxiety management in situations related to social anxiety (e.g., asking for help at the grocery store) and Agoraphobia (e.g., being left alone at the park) symptoms. Additionally, Cedric chose sport-specific situations to practice SeC (e.g., making an error in a game). Finally, Cedric was assigned tasks that required him to practice SeC in performance situations at home, school and sport settings. He reported that diaphragmatic breathing and solution generation were the most helpful Self-Control steps used outside performance meetings.

Performance Timeline (Meeting 6; Cedric, coach, and mother). The performance timeline was re-implemented in meeting 6. Cedric chose the performance scenario of practicing a sport-specific skill (taking a drop step in the outfield) because he was interested in further establishing his fielding skills with his coach present. Cedric visualized out loud in first person optimal thoughts and behaviors related to taking a drop step in the outfield for a fly ball. His coach, mother, and provider all expressed their admiration for him descriptively and brainstormed additional ways to optimize his rehearsal.

Environmental Control (Meeting 7; Cedric and mother). The Environmental Control intervention involved altering Cedric's environment to spend more time with goal-compatible cues or stimuli and less time with goal-incompatible cues or stimuli. During the initial meeting, the provider explained that certain environmental cues make goal attainment more or less likely to occur. Cedric, his mother, and his provider developed a list of cues (i.e., people, places, situations, and emotions) that facilitated Cedric's goal attainment and a list of cues that inhibited his goal attainment. For example, Cedric identified certain family members and teammates who were facilitators of his goals, while excessive social media use and video games were identified as incompatible with his optimal time management and sports performance goals. Once cues were established, Cedric and his mother brainstormed strategies to spend more time with cues associated with goal attainment and less time with incompatible cues. In subsequent meetings, Cedric, his mother, and the provider monitored his time spent on these cues.

Appreciation Exchange (Meeting 8; Cedric and mother). In Meeting 8, Cedric and his mother participated in an Appreciation Exchange. The family emphasized that they do not usually communicate appreciations to one another. Cedric responded that he appreciated his mother's loving personality and acts of service, while his mother responded that she appreciated Cedric's coachable, loyal, and caring character. They reflected that this interaction significantly improved their mood. At the end of the intervention, the provider assigned Cedric to express appreciations to his coach, sister, father, and teachers prior to the next meeting.

Discussion about choice culture (Meeting 9; Cedric and mother). The Semi-Structured Interview for Choice Culture in Therapy Scale (CCS) is a modified version of the Semi-Structured Interview for Ethnic Consideration in Therapy Scale (Donohue et al., 2006). It was performed pre-intervention with Cedric. The CCS is used to facilitate engagement, inform the provider about his cultural concerns/strengths, and increase the provider's awareness of the cultural factors that may impact the implementation of the intervention, which has been shown to be important in treatment outcomes and engagement for ethnic/racial minorities (Whaley & Davis, 2007). The CCS was performed again with his mother during Meeting 9 to reinforce the positive qualities of his culture of choice. Cedric emphasized the importance of being biracial as his choice culture, including the

heavy emphasis on family values and unique cultural traditions regarding food, music, and hobbies. The provider facilitated positive conversation, such as how admirable it is for him to use his family values as a source of inspiration for both school and sports, as well as being a person of color in athletics. Cedric described having conflicts with others about being Black, where he reported experiencing racist comments in the past. However, his mother described him as “respectful” because he disregarded these comments without instigating any conflict. He emphasized that these experiences motivated him identify positive people to associate with and take pride in his biracial identity. The provider and his mother descriptively praised Cedric for his commitment to embracing his biracial identity.

Dream Job Development (Meeting 10; Cedric and mother). The Dream Job Development (DJDev) intervention is designed to prepare athletes for their dream careers. The provider, Cedric, and his mother discussed important aspects of the most desirable career (e.g., being able to help others and working with athletes) and identified critical educational prerequisites, qualifications, and people (including significant others) who could assist in achieving the dream job. Certain steps of DJDev (such as researching career options and schools relevant to his career goals) were added to Cedric’s goal worksheet. Cedric’s dream job was related to coaching baseball players or being an athletic trainer to help injured athletes. Following the meeting, Cedric mentioned that he had successfully discussed potential career opportunities with family members (e.g., uncle) and researched colleges that would be a good fit for his career goals. Additionally, at the 10th meeting, it is standard for TOPPS providers to ask the athletes and their significant others if they would like to conclude the program or add additional meetings based on goal accomplishment. Cedric and his mother both agreed that they would be content with concluding the program at the next meeting because of his goal accomplishment.

Final Meeting Intervention (Meeting 11; Cedric and mother). During the final meeting, generalization was implemented to review the positive aspects of Cedric’s efforts over the last few months and assist him in looking toward the future with optimism. Generalization has been shown to solicit additional positive affect by emphasizing skill development (Donohue et al., 2014). Additionally, generalization assisted Cedric in recognizing the extent to which he had improved and his ability to manage potential obstacles. The generalization intervention included the following components:

1. **Reviewing overall progress in optimizing performance in relationships, factors specific to performance, and mental health.** First, Cedric and his mother indicated his confidence has increased in social interactions. Cedric stated that he felt more connected to his peers, teammates, and family members after learning how to exchange appreciation. Cedric also described feeling more confident in asserting himself when he needs help and responding effectively to feedback after learning the positive request and HEARD skills. Second, Cedric said he felt less anxious after acquiring the self-control skills and that thought-stopping and diaphragmatic breathing techniques had been the most effective strategies for him. Lastly, Cedric described his sports performance as improving after utilizing various strategies (e.g., asking for help from coaches, focusing on the task at hand, goal setting). His mother commented that Cedric had pitched a complete game that won his team the championship at their most recent tournament just before the last meeting.
2. **Establishing ways Cedric can maintain goal progress after TOPPS.** The provider, Cedric, and his mother brainstormed ways Cedric could maintain his goal progress moving forward. Methods included maintaining an optimal routine for school, asking for help from coaches when needed, maintaining consistency in athletic training, and focusing on positives and utilizing thought stopping, diaphragmatic breathing, and solution generation when anxiety arises.

3. The provider and significant others offer descriptive praise for Cedric's effort and the strategies he utilized and brainstormed to maintain goal progress after TOPPS. The provider commented on Cedric's desire to maintain optimal relationships with others and utilize his goals worksheet to monitor his goal accomplishment. His mother commented that others had noticed improvements in Cedric's social skills, including his coach, grandparents, father, and teachers. Both the provider and his mother commended Cedric for his positive attitude and desire to continue optimizing his sports performance, academics, and relationships.
4. The provider, Cedric, and significant others exchanged what they loved, admired, respected, or appreciated about Cedric's optimization process. Cedric's mother began by emphasizing Cedric's qualities of loyalty, compassion, and willingness to learn. The provider reinforced the positive characteristics that Cedric's mother highlighted and added Cedric's courage and positive attitude as things that were admired about Cedric's optimization process. Cedric and his mother expressed their gratitude to the provider for his persistence, knowledge, and mentorship in assisting Cedric in moving toward optimization in all areas of his life. Lastly, the provider and Cedric commented on his mother's dedication and love for him to help him throughout the whole program. Cedric said that his participation in TOPPS "improved his confidence, motivation, and skills" by providing him with the tools to overcome present and future challenges. In addition, both Cedric and his mother expressed gratitude for the opportunity to learn skills relevant to sports performance, mental health, and relationships, with his mother stating that the program "could not have come at a better time in Cedric's life."

Intervention Integrity

Strategies employed to ensure implementation integrity included documentation of techniques used during each session, participant ratings of engagement and progress towards goals, ongoing clinical supervision by a licensed psychologist, structured agendas and detailed protocol checklists to guide intervention and measure protocol adherence, reviews of audio recordings by independent raters to evaluate protocol adherence and measure inter-rater reliability, and participant ratings of helpfulness with each intervention component during each session. Intervention integrity scores were calculated in a two-step process:

1. The overall percentages of intervention protocol steps completed based on the provider self-report were computed, thus serving as validity estimates for protocol adherence.
2. Independent raters randomly selected 10% of session audiotapes and rated the number of steps implemented. Inter-rated agreement was determined by comparing independent rater and provider ratings with 70% protocol adherence considered satisfactory.

Protocol Adherence. According to the provider, the overall protocol adherence across 11 sessions was 99% (SD = 3.67%, range = 88–100%). Inter-rater agreement between the provider and an independent rater demonstrated high reliability (see guidelines from [Bellg et al., 2004](#)).

Consumer Satisfaction and Engagement Ratings. Following completion of TOPPS, Cedric reported high satisfaction with intervention components, as indicated by the Athlete Helpfulness Rating Scale, with an average score of 6.85 (SD = .36). The provider rated Cedric's engagement with each intervention component as 95.5% optimal. Cedric reported high satisfaction with services received based on the CSQ-8 total score of 32. Cedric attended 100% of the scheduled meetings.

Controlled Evaluation of Positive and Negative Assertion

Baseline. Figure 1 shows multiple-baseline data for Cedric's social skills assessment through role-plays and elevated SCL-90-R subscales. As hypothesized, Program Orientation, Dynamic Goals and Rewards, and Performance Planning did not affect his social skills.

Phase 1: Evaluation of Positive Request Training. A 4-week baseline was established for Cedric's social skills in positive and negative assertion. After implementing Positive Request training, Cedric's positive assertion skills improved, reaching peak performance in Probe 6. Cedric consistently met nine out of nine criteria for positive requests from Probe 6 and onwards. As expected, his negative assertion skills demonstrated minimal improvement.

Phase 2: Evaluation of HEARD Training. After implementing HEARD training, Cedric's negative assertion skills improved, reaching peak performance in probe 9. As expected, Cedric's positive assertion skills were sustained throughout phase 2.

8. Complicating Factors

Cedric was initially non-compliant with his homework assignments related to engaging in his exposure tasks for the week. To address this, the provider had Cedric rehearse the task during the meeting to provide him an opportunity to practice while descriptively praising him for the optimal behavior rehearsal skills demonstrated in the session. Additionally, the provider, Cedric, and his mother re-adjusted his exposure list to increase likelihood that he would be able to complete his homework in following weeks. Cedric was then able to complete his homework and desensitize himself to anxiety provoking situations. See Table 3 for the exposure tasks Cedric listed as goals, along with his pre- and post-treatment exposure ratings for each task.

9. Access and Barriers to Care

Video-conferencing was used to reduce risk of COVID-19 exposure. Other benefits of video-conferencing included that it facilitated access to care through limited travel time, allowed Cedric and the provider to search for resources on the internet during meetings, and allowed inclusion of significant others who would not have been able to attend performance meetings. Additionally, video-conferencing may be used to assist TOPPS service provision for athletes who frequently travel or reside in locations outside the service provider's area. (e.g., athletes traveling for club sports).

10. Follow-Up (Post-Intervention and 3-Month Follow-Up)

The reliable change index (RCI; Jacobson & Truax, 1991) was used to help determine if changes on the SCL-90-R were significant beyond the standard error of measurement, with RCI scores greater than 1.96 reflecting meaningful changes across time. RCI scores indicated meaningful improvement in the SCL-90-R Global Severity Index, phobic anxiety, anxiety, and somatization scales from pre- to post-intervention and from pre-intervention to 3-month follow-up (see Table 1). SCL-90-R scores were improving prior to Probe 1 which limits causal inferences between the TOPPS intervention and the SCL-90-R. The stable baseline for Cedric's social skills is evidence of the interventions effect on those outcomes. Post-intervention KSADS conducted by a rating blind to prior diagnosis indicated no current clinically significant social anxiety disorder and agoraphobia symptoms after the 3-month follow-up. Eyeballing procedures (Byrne, 2017) used to estimate magnitude of effect for all secondary measures (SIC, TLFB, YSR, SPS, SARI, Overall Happiness with Coaches, Teammates, and Family) from pre- to post-test and from pre-test to 3-month follow-up indicated improvements on these measures (see Tables 1 and 2).

11. Treatment Implications of the Case

This case study provides preliminary evidence supporting the efficacy of TOPPS for treatment of Social Anxiety Disorder and Agoraphobia in a biracial adolescent athlete. Cedric also expressed improvement in sports performance. Cedric 100% attendance at scheduled sessions, high ratings of the program, and the involvement of his family members and other significant others in sessions provides preliminary support that TOPPS's sports-specific component may be an effective strategy of engagement for athletes and families that have been previously reported to not engage in treatment (Neal & Turner, 1991). Finally, the video-conferencing format was effective for delivering TOPPS interventions while simultaneously addressing barriers to care that contribute to lack of access to and engagement in mental health treatment.

12. Recommendations to Clinicians and Students

The TOPPS intervention components can handle multiple cognitive and behavioral problems associated with Social Anxiety Disorder and Agoraphobia. However, in choosing the individual treatment plans and modifying interventions to address the presenting diagnostic symptoms, the treatment provider must develop a treatment plan that optimally meets the client's treatment goals. Therefore, the treatment provider should emphasize the client's respective disorder. Also, when multiple diagnoses are present, as in the current case, it is prudent to include scenarios for the relevant diagnostics in each intervention component. For instance, because TOPPS focuses on goals in both sports and life, the provider was able to teach Cedric skills that could be applied in life outside of sports (e.g., communication skills with teachers or potential employers). To promote significant other involvement, treatment providers are also recommended to provide psycho-education on how involving various significant others (e.g., coaches) in treatment is beneficial to program outcome (Gavrilova et al., 2022). For instance, involving coaches in meetings allows them to recommend relevant practice scenarios for the athlete in and outside of sessions, develop goals, model and reinforce skills, and provide encouragement.

Additionally, TOPPS was able to be delivered fully through video-conferencing, which was consistent with Boelen et al.'s (2020) recommendations. This indicates that TOPPS is adaptable and effectively minimizes the risks of contracting COVID-19 (Zhou et al., 2020). However, the lack of mental health interventions available for ethnic/racial minority and low-income youth athletes demonstrates a continued need for intervention development to address this healthcare disparity (Donohue et al., 2021). Additionally, an emphasis is placed on the fact that mental health providers can implement TOPPS interventions with a variety of training backgrounds (e.g., clinical social workers, counseling psychologists, clinical psychologists, and licensed mental health counselors). Therefore, creating opportunities for mental health providers from diverse backgrounds to learn TOPPS interventions may be useful in addressing the service gap for diverse youth athletes (Donohue et al., 2020). Lastly, these preliminary results support the need to examine TOPPS in randomized clinical trials (Rounsaville et al., 2001).

Appendix A

Role Play Assessment Prompts

1. You want to ask your coach to spend extra time with you after practice to help you with your fielding. Imagine I'm the coach, and I come up to you and say, "Hey, how's it going?"

2. You want to ask your classmate to assist you in locating information about scholarships at the library. I'm one of your classmates at the library, and I say, "Have you been here a while?"
3. You want to ask a relative to drive you to the grocery store. One of your adult relatives who drives comes up to you and says, "Hey, what have you been up to?"
4. You make an error in a game. Imagine I'm the coach and I say "what happened out there? It looked like you weren't even paying attention.

(wait for a response) "I don't know, maybe take more repetitions at practice, stay to work with me after, ask a teammate for help, or watch the older guys play."

(wait for a response) "I don't know, what do you think?"

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