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## Controlled Evaluation of a Family-Based Optimization Intervention Implemented Through Video-Conferencing to Address ADHD and Oppositional Defiant Disorder in an Adolescent Athlete

Dereck Davy Phrathep

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CONTROLLED EVALUATION OF A FAMILY-BASED OPTIMIZATION  
INTERVENTION IMPLEMENTED THROUGH VIDEO-CONFERENCING TO ADDRESS  
ADHD AND OPPOSITIONAL DEFIANT DISORDER IN AN ADOLESCENT ATHLETE

By  
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Bachelor of Arts – Psychology  
Florida International University  
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A thesis submitted in partial fulfillment  
of the requirements for the

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College of Liberal Arts  
The Graduate College

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## Thesis Approval

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Controlled Evaluation of a Family-Based Optimization Intervention Implemented  
Through Video-Conferencing to Address ADHD and Oppositional Defiant Disorder in an  
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## ABSTRACT

Adolescent athletes with Attention Deficit Hyperactivity Disorder (ADHD) and Oppositional Defiant Disorder (ODD) experience unique challenges that impact their sport performance, such as making errors due to poor concentration and adverse relationships with referees due to poor anger management. Pharmacological treatments have shown to be successful in treating ADHD comorbid with ODD. However, there are negative consequences for pharmacological treatments for adolescent athletes (e.g., banned by sports organizations). Well-established behavioral interventions for ADHD and ODD in non-athlete populations have included family-based, cognitive-behavioral approaches. However, none of these interventions have been evaluated in competitive adolescent athletes. The current case trial involved a controlled multiple baseline across behaviors (i.e., positive assertion, negative assertion) evaluation of The Optimum Performance Program in Sports (TOPPS) in an adolescent athlete diagnosed with ADHD and ODD. Intervention was provided using video-conferencing technology due to COVID-19. The trial included a battery of psychological measures administered at baseline, 4-months post-baseline and 5-months post-baseline. Results indicated that negative and positive assertion skills improved, but only when targeted, and severity of ADHD and ODD symptom severity, and general mental health symptoms decreased from pre- to post-treatment and that these improvements were maintained at 1-month follow-up. Similar improvements were occurred for factors interfering with sport performance, relationships with coaches, teammates and family. Treatment integrity and consumer satisfaction were high.

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## CHAPTER 1

### LITERATURE REVIEW

Attention-Deficit/Hyperactivity Disorder (ADHD) is characterized by hyperactivity, impulsivity, and/or inattention, and affects up to 8% of adolescents (Poysophon & Rao, 2018). Oppositional Defiant Disorder (ODD) is characterized by patterns of anger or irritability and argumentative behavior, and up to 50% of youth with this disorder evidence ADHD (American Psychiatric Association, 2013). Adolescent athletes with ADHD experience unique adverse consequences in performance (Nazeer, Mansour, & Gross, 2014), including negative feedback from coaches, teachers, and parents (Podolski & Nigg, 2001). Symptomology is exacerbated in youth athletes with ADHD when comorbid ODD is present. Indeed, in both school and sport environments these youth are often hostile and negatively reactive, leading coaches to more frequently report poor attitudes having them on their teams (Beyer *et al.*, 2008), and officials more frequently disqualifying them from sport competition (Johnson & Rosen, 2000), than youth who do not evidence mental health symptomology.

Adolescents with ADHD tend to demonstrate poor motor performance (Harvey & Reid, 2003), resulting in difficulty learning game rules and strategies and applying them fluidly in game situations (i.e., distraction causing careless errors, such as missing a ground ball in a baseball game). Such errors frustrate teammates and coaches and negatively impact relationships (Pelham *et al.*, 1990). Difficulty controlling emotions during sports competition can also adversely impact performance (Wagstaff, 2014), including forced removal from sports competition or practice (Friesen *et al.*, 2013). Both ADHD and ODD adversely impact athletes' academic performance, inherently affecting their eligibility to participate in school-based sports teams and increasing the likelihood of remediation (White, Harris, & Gibson, 2014).

## **Behavioral and Pharmaceutical Treatments for Adolescents Athletes with ADHD and ODD**

Psychosocial treatments for ADHD, and ADHD comorbid with ODD, have been evaluated in controlled trials involving youth, but not in youth athletes (Stewman *et al.*, 2018). Stimulant medications for ADHD are customarily prescribed when symptom impairment is moderate to severe, and considered the preferred treatment (Kutcher, 2011; Seixsas, Weiss, & Muller, 2012). Stimulant medications inhibit the reuptake of dopamine and norepinephrine, which improve attention span and concentration, and include methylphenidate, dextroamphetamine and amphetamine, dextroamphetamine, lisdexamfetamine, modafinil, and armodafinil (Stewman *et al.*, 2018). The physiological benefits of stimulant medications occur relatively soon after ingestion, usually within an hour. However, there are disadvantages to using stimulant medications in the treatment of athletes with ADHD, including stomachache, decreased appetite, insomnia, headaches, and in rare cases, sudden cardiac death (Kutcher, 2011). These concerns have led professional sport organizations, such as the World Anti-Doping Agency (WADA), International Olympic Committee (IOC), and National Collegiate Athletic Association (NCAA) (Stewman, Liebman, & Sandella, 2018) to restrict stimulant drug use in competition to athletes with therapeutic use exemptions (Putukian *et al.*, 2011). These exemptions are difficult to obtain due to amplified safety concerns regarding exercise intensity (Han *et al.*, 2019). Atomoxetine is the only non-stimulant medication approved by the FDA and not banned by the NCAA, WADA, or IOC. The therapeutic benefit of non-stimulant medication for ADHD is usually not appreciated until 3 to 6 weeks of continual use (Parr, 2011). Lastly, while demonstrably effective, pharmacological treatment for ADHD has the potential to be abused (Putukian *et al.*, 2011). Hence, behavioral interventions for ADHD are often attempted

prior to medication management, and when behavioral interventions are insufficient, they are typically augmented with stimulant medications.

Pharmacological treatments are often discouraged in athletes with ADHD, especially those with aspirations to compete at national or international levels (Nazeer, Mansour, & Gross, 2014). Level one therapies for ADHD include behavioral parent training, behavioral classroom management, behavioral peer interventions, and organization training, indicating that these therapies have been tested thoroughly and are well-established with adolescents with ADHD (Evans, Owens, & Bunford, 2014). While behavioral treatments have demonstrated efficacy in treating adolescents with ADHD, there are very few controlled evaluations of behavioral treatments for ADHD in adolescent athletes. O'Connor *et al.* (2014) evaluated a behavioral treatment program in young children with ADHD that included a sports training component (i.e., Summer Treatment Program; STP). The study results indicated improvements in sport functioning, which included knowledge of game rules, in vivo game performance, fundamental skill tasks (motor proficiency, ability to trap a soccer ball appropriately, and improved ability to catch a baseball), and parent reports of improved sports skills and good sportsmanship. The STP includes behavior modification as its core intervention within a recreational camp-like setting (Pelham *et al.*, 2005; Pelham & Fabiano, 2008; Pelham & Hoza, 1996). This program has evidenced behavioral and academic improvements and parent and counselor reports of improved prosocial behavior and specific sports skills in children (O'Connor *et al.*, 2014; Pelham & Hoza, 1996). However, while the Summer Treatment Program focuses on sport-participation benefits in young children with ADHD, it does not explicitly address sports performance in adolescent athletes.

There are many evidence-supported behavioral interventions to treat adolescents with ODD. These include combinations of parent-management training programs and family therapy, cognitive problem-solving skills training, social-skills programs, and school-based programs (AACAP, 2009). Behavioral interventions for ODD have been shown to help youth achieve greater mastery in controlling their behavior and developing respect for authority figures (Conant-Norville & Tofler, 2005). Additionally, including parents in behavioral treatments have been shown to be the most effective way to reduce behavioral symptoms of ODD in all age groups (Brestan & Eyberg, 1998). Some of the most supported ODD interventions are family-based, such as Family Behavior Therapy (Azrin *et al.*, 2001). Medication alone has not been supported as a treatment for ODD, however, it may be helpful (AACAP, 2009), particularly when ODD is comorbid with ADHD (Turgay, 2009).

### **Why Customize Evidence Supported Interventions for ADHD and ODD to be Sport Specific and Capable of Addressing Pandemics (e.g., COVID 19)?**

Relevant to treatment development, the benefits of exercise and positive reinforcement make sport attractive for children with ADHD (Pujalte *et al.*, 2019). However, evidence-based treatments for ADHD and ODD have not evolved to prescriptively incorporate sport in treatment planning. Therefore, it makes sense to adapt existing evidence-based behavioral interventions for ADHD and ODD to fit sport contexts, and in doing so, better promote their engagement, receptivity, and effectiveness in athletes (Geidne, Quennerstedt, & Eriksson, 2013).

Athletes who evidence ADHD and ODD are presumed to be more interested in behavioral intervention when it addresses sports performance than traditional applications (Schinke, Stambulova, & Moore, 2017). Such adjustments are hypothesized to improve attention, enhance working memory (Chai, Hamid, & Abdullah, 2018), establish stronger connections between new

and existing information, and encourage greater interest in practicing therapeutic skill sets in a real-world context (Brewin, 1989; Doyle & Zakrajsek, 2013).

Adolescents with ODD typically are brought to treatment by their parents and often demonstrate low motivation and reluctance to participate (Steiner & Remsing, 2007). Therefore, mental health service engagement is especially warranted (Karver & Caporino, 2010). Evidence-supported mental health engagement strategies for adolescents with ODD include client-driven approaches focused on establishing an emotional, behavioral, and cognitive connection to the process of intervention (Karver *et al.*, 2008). However, sport-specific engagement strategies, such as those used in collegiate athletes (Donohue *et al.*, 2020), have yet to be evaluated in adolescent athletes.

While there are many benefits of sport participation, there are stressors associated with competitive sports for adolescent athletes (Goyen & Anshel, 1998), including pressure to perform, conflicts with coaches or opponents, fear of injury, making errors, and poor coach-athlete relationships (Holt, Hoar, & Fraser, 2005). Maladaptive coping strategies often exacerbate these stressors, which may exacerbate mental health symptomology (Tamminen & Holt, 2012). Therefore, there is a great need to develop and evaluate, using controlled methodology, sport-specific mental health intervention for adolescent athletes.

The Optimum Performance Program in Sports (TOPPS) has demonstrated significant improvements in collegiate athletes' relationships, interferences with sports performance, and problems associated with mental health symptomology up to 8 months post-intervention in clinical trials (Chow *et al.*, 2015; Donohue *et al.*, 2020; Donohue *et al.*, 1998; Donohue, Chow, *et al.*, 2015; Galante, Donohue, & Gavrilova, 2017; Gavrilova, Donohue, & Galante, 2016; Pitts *et al.*, 2015), and in one controlled trial particularly as mental health diagnostic

severity increased (Donohue *et al.*, 2018). In a case trial involving an Asian American female adolescent diagnosed with Social Anxiety Disorder, an adaptation of this intervention was determined to lead to similar improvements up to one-month follow-up (Donohue *et al.*, 2021).

The cancellation of athletic seasons and fear of contracting COVID-19 has negatively affected the psychological well-being of youth athletes (Sanderson & Brown, 2020). Further, COVID-19 has also impacted the delivery of traditional mental health services to be adapted to telehealth modalities (Pfender, 2020). Consequently, mental health providers must be mindful of the unique stressors that consumers experience due to COVID-19 while implementing psychologically-based interventions safely (Zhou *et al.*, 2020). Along these lines, Merzon *et al.* (2020) determined untreated ADHD elevates risk for the contraction of COVID-19 through decreased ability to maintain COVID-19 safety precautions (e.g., inattention and impulsivity might increase the likelihood of forgetting to wear a mask in public or coming within 6 feet of a friend indoors). While risk factors for COVID-19 infection and ODD have not been formally researched, evidence has shown that the restrictions placed on children with ODD and ADHD have exacerbated oppositional symptoms (e.g., boredom, distraction, opposition; Bobo *et al.*, 2020; Melegari *et al.*, 2020). Thus, TOPPS is especially relevant to the improvement of these symptoms (Donohue *et al.*, 2018), but with added COVID-19 precautions (i.e., video-conference intervention delivery). Zoom is a video-conferencing software that has the option to become Health Insurance Portability and Accountability Act (HIPAA) certified. It has been widely used by psychotherapists and shown to be efficacious in delivering behavioral therapies (Boelen, 2020), and its integration into TOPPS delivery is likely to be successful as teletherapies have been used previously to facilitate intervention engagement in FBT (Donohue *et al.*, 2016).

## CHAPTER 2

### PURPOSE OF THE STUDY

The present study aim is to assess efficacy of The Optimum Performance Program in Sports (TOPPS) in an adolescent athlete evidencing comorbid ADHD and ODD. Dependent measures focus on psychiatric symptoms, factors that have been found to directly impact sport performance of this youth, and relationships with significant others.

The following hypotheses were investigated:

- H1) The participant will demonstrate significant reductions in severity of psychiatric symptoms and factors interfering with sport performance, and improvements in relationships with coaches, teammates, family members, teachers, and peers, according to standardized measures at post-intervention and follow-up. Throughout this study the participant will also maintain abstinence from illicit drugs and alcohol.
- H2) Interventions will reliably be implemented with integrity (i.e., 80 percent of intervention protocol).

## CHAPTER 3

### METHOD

#### **Participant**

The participant is a 17-year old White male high school varsity baseball player referred to a university-based sport optimization program by his assistant coach due to “behavioral outbursts” at baseball practices. The participant was screened to assure the following inclusion and exclusion criteria were met: (a) participating in organized sports, (b) between 12 and 17 years of age, (c) enrolled in a public or private high school, (d) not actively receiving psychotherapeutic intervention.

#### **Presenting Complaints**

During intake assessment, the participant reported behavioral outbursts and struggling with concentration in the baseball field (competition and training) and at home and school. He reported that he was removed from practices due to these issues. The participant reported frequent frustration with teachers, coaches, peers, and teammates; and he reported these presenting concerns negatively impacted his grades at school and baseball performance. He reported interest in gaining better self-control and concentration.

#### **Case History**

At the time of intake, the participant was living with his father and older adult sister. His father reported being employed as an electrician. His mother died when he was seven years old due to an illicit drug overdose. The participant’s father reported that his son experienced significant inattention and difficulty controlling his temper. The participant’s father attributed these problems to verbal and physical bullying by his peers, and relationship difficulties in high

school were said to include “explosive swearing” and punching walls. Additionally, the participant described having difficulty respecting coaches, umpires, and teachers.

### **Assessment Measures**

*Child and Adolescent Services Assessment (CASA; Ascher et al., 1996).* This semi-structured interview assesses mental health service utilization, opinions about mental health services, and access/barriers to mental health services. The CASA was administered at baseline. The CASA has demonstrated high interrater reliability (>94%) for items (Schwartz et al., 2019). The CASA has demonstrated concurrent validity in studies comparing CASA data to mental health centers’ management information systems (Ascher et al., 1996).

### **Primary Outcome Measures:**

A comprehensive battery of assessment measures was administered by a trained assessor one week before intervention (baseline), four months post-baseline, and 5-months post-baseline. A sub-set of measures were administered consistent with multiple-baseline across behaviors methodology (Barlow & Hersen, 1988). The comprehensive battery included the following:

*Kiddie – Schedule for Affective Disorders and Schizophrenia for School Aged Children 6 to 18 years old DSM-5 (K-SADS; Kaufman, Birmaher, Axelson, Perepletchikova, Brent, & Ryan, 2016).* This semi-structured interview was used to assess psychiatric symptoms consistent with the Diagnostic and Statistical Manual of Mental Disorders (5th ed). Inter-rater agreement of the K-SADS with similar measures is high (range: 93% to 100%). Test-retest reliability coefficients for the KSADS have ranged from .77 to 1.00 for current and lifetime diagnoses of Major Depression, Bipolar Disorder, Generalized Anxiety Disorder, Conduct and Oppositional Defiant Disorders, and .63 to .67 range for current diagnoses of Posttraumatic Stress Disorder and ADHD. Additionally, the KSADS has demonstrated concurrent validity with the Conners’

Parent Rating Scale in children with ADHD and the Child Behavioral Checklist Externalizing Scale in children with behavioral disorders (Kaufman *et al.*, 1997).

***The Symptoms Check-List-90-Revised (SCL-90-R) (Derogatis, 1986).*** This 90-item measure is a widely utilized scale for general psychiatric symptoms and has been normed on adolescent populations (Preti *et al.*, 2019). Symptoms are divided into the following nine dimensions: Somatization (SOM), Obsessive-Compulsive (O-C), Interpersonal Sensitivity (I-S), Depression (DEP), Anxiety (ANX), Hostility (HOS), Phobic Anxiety (PHOB), Paranoid Ideation (PAR), and Psychoticism (PSY). There are also the following three Global Indices: Global Severity Index (GSI), Positive Symptom Distress Index (PSDI), and Positive Symptom Total (PST). Internal consistency coefficients for the nine symptom dimensions ranged from Cronbach's  $\alpha$  coefficient of .73 to .89 (Preti *et al.*, 2019). Preti *et al.* (2019) also reported high test-retest reliability.

***Sport Interference Checklist (SIC) (Donohue, Silver, et al., 2007).*** This 40-item measure includes three inventories that are used to assess factors that have been indicated to interfere with sport training (Problems in Sport Training Scale; PSTS), sport competition (Problems in Sport Competition Scale; PSCS), and life outside of sports (Problems with Life Outside of Sports; PLOS). For example, "How often does feeling stressed out interfere with your performance in training." Items are rated on a 7-point Likert-scale of frequency (1 = never, 7 = always). The items are summed to obtain a total score. Initial psychometric evaluation of the SIC yielded high to excellent internal consistency (Cronbach's  $\alpha$  coefficients for PSTS items = .91, PSCS items = .92, and DSPS items = .95; Donohue *et al.*, 2007). Additionally, the PSTS and PSCS subscales have demonstrated convergent validity with the Global Severity Index with

collegiate athletes (Donohue *et al.*, 2007), and have been shown to reliably predict psychiatric symptom severity in collegiate athletes (Donohue *et al.*, 2019).

### **Secondary Measures:**

***Time-Line Follow-Back interview (TLFB) (Sobell et al., 1996).*** This assessment measure uses a calendar with pre-recorded anchors to assist retroactive reports of alcohol and non-prescribed drug use frequency and number of days attending school and sport practice. The TLFB has significant psychometric support, including test-retest reliability ranging between 0.79 and 0.98 and correlations with urinalysis testing (Donohue *et al.*, 2004; Sobell *et al.*, 1979).

***Youth Self Report 11-18 (YSR) (Achenbach, 1991).*** This 112-item measure assesses adolescents' competencies and problem behaviors. The Externalizing and Internalizing Behavior Problem scales will be used in the current study. The YSR has demonstrated an internal consistency ranging from 0.67 to 0.91, test-retest reliability ranging from 0.71 to 0.95, and strong content validity (Achenbach & Rescorla, 2001; Ebesutani *et al.*, 2011). The YSR also demonstrates inter-rater reliability with parent reports on the Child Behavior Checklist (CBCL).

***Beck Depression Inventory-II (BDI-II) (Beck et al., 1996).*** This 21-item measure is one of the most widely used methods of assessing depressive symptoms in adolescents and adults. The BDI-II has demonstrated an internal consistency range between 0.83 and 0.96 and test-retest reliability range between 0.73 and 0.96 (Wang & Gorenstein, 2013). The BDI-II has demonstrated concurrent validity with other well-established depression scales (e.g., the Center for Epidemiologic Studies of Depression, the Hamilton Depression Rating Scale, the Zung Self-Rating Depression Scale, the Montgomery-Åsberg Depression Rating Scale, and the Geriatric Depression Scale) (Wang & Gorenstein, 2013).

***Student Athlete Relationship Instrument (SARI) (Donohue, Miller, et al., 2007).*** This 63-item measure includes four inventories that assess sport-specific problems in relationships with Family, Coaches, Teammates, and Peers. Participants respond to items (e.g., at least one of my teammates has a negative attitude towards me) utilizing a 7-point Likert scale (1= extremely disagree, 7 = extremely agree). The SARI has demonstrated high internal consistency for all scales and criterion-related validity with the Overall Happiness with Family, Coaches, Teammates and Peers scale in adolescent adolescents (Cronbach's  $\alpha$  coefficients for Teammates = .93, Coaches = .96, Family Members = .92, and Peers = .87; Donohue *et al.*, 2007). The SARI has been used to predict mental health symptom severity in collegiate athletes (Hussey *et al.*, 2019).

***Overall Happiness with Family, Coaches, Teammates and Peers (Donohue, Miller, et al. 2007).*** This 4-item measure utilizes a 0 to 100 scale of happiness (0 = completely unhappy, 100 = completely happy). Items assess the athlete's ratings of overall happiness in four relationships, e.g., coaches, teammates, family, and peers. This measure has demonstrated criterion-related validity in adolescent (Donohue *et al.*, 2007), and collegiate athletes (Hussey *et al.*, 2019).

***Client Satisfaction Questionnaire-8. (CSQ-8) (Larsen et al., 1979).*** This 8-item (4-point scale) self-report questionnaire evaluates the quality and satisfaction of the services the client received. A total score (ranging from 8 to 32) may be derived by calculating the average of the eight items with higher scores reflecting greater quality and satisfaction with services received. The CSQ-8 has demonstrated high internal consistency, with Cronbach's  $\alpha$  coefficients ranging from 0.83 to 0.93 (Sederer *et al.*, 1996). The CSQ-8 has demonstrated concurrent validity with the Treatment Perceptions Questionnaire (Kelly *et al.*, 2017).

***Overall Anger with Coaches, Teammates, Teachers, Peers (Donohue, Miller, et al. 2007).*** This 3-item measure assesses overall anger with coaches, teammates, and teachers utilizing a 0 to 100 response format for each item (0 = not at all angry, 100 = completely angry; Donohue *et al.*, 2007).

***Average Anger over the Last 7 Days (Craig et al., 2008).*** This 7-item measure assesses daily severity of anger utilizing a 7-point Likert response set (1= not angry at all, 7 = extremely angry). A single rating is recorded by the participant for each of the past seven days, and the ratings are averaged. This measure is consistent with the intensity recording approach used to determine the intensity of the target behavior (e.g., experience of anger) during a given period (e.g., each day) (LeBlanc *et al.*, 2016).

***Frequency of Outbursts (Craig et al., 2008).*** This measure asks the participant to indicate how many angry outbursts (e.g., shouting, cursing, and/or throwing or breaking things when upset) they have had in the past 7 days. A single rating is recorded for the total amount of outbursts in the past 7 days. This measure is consistent with the frequency recording approach used to determine the number of times a behavior occurs (e.g., angry outbursts) in a given period (e.g., past 7 days) (Merbitz, Merbitz, & Pennypacker, 2016).

***Suicide Probability Scale (SPS) (Cull & Gill, 1982).*** This measure assesses suicidal risk/ideation. The resulting scores permit examining contraindicative factors related to suicidal ideation in youth athletes. The SPS has demonstrated excellent internal consistency for the Total Scale with a Cronbach's  $\alpha$  coefficient of 0.93 and internal consistency ranging from fair to good for the remaining scales (0.62 for Negative Self-Evaluation, 0.78 for Hostility, 0.80 for Hopelessness, and 0.89 for Suicide Ideation) (Eltz *et al.*, 2006). Additionally, the SPS has

established predictive validity in suicidal attempts, suicidal statements, and self-destructive behavior (Larzelere *et al.*, 1996).

### ***Pre-Intervention Assessment Results***

The participant's results on the KSADS indicated that he met DSM-5 criteria for ADHD, predominantly inattentive type, and ODD. Table 1 includes the participant's responses to the SCL-90-R, YSR, and BDI-II at baseline assessment. Table 2 includes the participant's responses to the SIC and SARI measures at baseline assessment. The SCL-90-R revealed that he scored above clinical thresholds on several dimensions of mental health symptomology, including Obsessive-Compulsive, Hostility, Somatization, and Global Severity Index, and borderline clinical levels on Anxiety and Psychoticism. Consistent with his KSADS and SCL-90-R results, his YSR scores demonstrated elevations in Attention Problems, Aggressive Behavior, Externalizing Problems, Attention Deficit/Hyperactivity Problems, and Oppositional Defiant Problems. He did not report any drug or alcohol use on the TLFB. Thus, his baseline assessment indicated no problems regarding substance use. His BDI-II total score was a 4, suggesting minimal depressive symptoms.

He demonstrated elevations in several subscales of the SIC in both Training and Competition (i.e., Academic, Injury, Team Relationships, Overly Confident/Critical), while his Thoughts, Stress, and Motivation subscale scores reflected relative strengths. His SARI Teammates and Coaches subscales were relatively high compared to his Family and Peers, indicating that his relationship with his coaches and teammates were negatively affecting his performance.

### **Study Design**

In addition to the comprehensive assessment battery that was administered before intervention implementation and 4- and 5-months post-baseline (to assess changes in sport performance, relationships, and mental health symptomology across this study), a multiple-baseline across behaviors experimental design was used to assess the effects of specific intervention components in decreasing the participant's frequency of outbursts, teachers, coaches, and teammate relationships, ADHD and ODD related symptoms, and positive and negative assertion skills in a controlled context (Barlow & Hersen, 1988). These behaviors were monitored immediately before each meeting throughout the study using 10-min probe assessments. Selected subscales from the SCL-90-R, SIC, and SARI (see Figure 1) were administered at each probe. It was predicted that the participant's negative assertion skills (i.e., responding to an aversively perceived situation), as assessed in probe sessions, would improve once targeted in week 4 while his positive assertion skills (i.e., requesting something desired) would demonstrate minimal improvements. The participant's positive assertion skills in probe sessions were predicted to improve once this skill set was targeted in week 7. Throughout positive assertion skills training it was predicted that his negative assertion skills would be maintained. The participant's relationships, frequency of outbursts, and selected subscales from the SCL-90-R, SIC, and SARI were predicted to improve across time.

### **Case Conceptualization**

The participant's case was conceptualized from a cognitive-behavioral perspective. The participant and his father indicated that the participant evidenced severe difficulty sustaining attention since Elementary school. The participant described his mind "going blank" when others spoke and frequently responding to queries with "I don't know" due to self-reported difficulties thinking of a response. He reported being easily distracted by his surroundings and avoiding

tasks that required sustained attention to avoid criticism from others. ADHD and ODD are both affected by frontal lobe dysfunction (Nøvik *et al.*, 2020). The participant's beliefs about his concentration (e.g., "I can never focus during lectures") and executive functioning challenges (e.g., memory and attention) are conceptualized as lack of cognitive coping skills as a result of his untreated ADHD (Nøvik *et al.*, 2020). He approached events with elevated expectations for positive outcomes. For example, he would solicit help from a teacher expecting that the teacher will help with his problems and when teacher couldn't help him in the moment, he interpreted it with maladaptive thinking patterns (e.g., "teachers are unhelpful and I can't trust asking teachers for help") (Beck, 1995; Ramsay and Rostain, 2008). These elevated expectations also occurred in sport settings (e.g., "I can't trust coach because he took me out of the game").

His difficulties with attention were reported to negatively impact his school and sports performance and were said to be reinforced by his parents through modeling (Harvey *et al.*, 2003). He reported making careless errors, misinterpreting information from his coach, and forgetting to submit his assignments on time. These actions led to aversive consequences from others, which likely intensified symptoms associated with distractibility and stress and decreased his interest in skill development. The participant's concentration was reported to become exacerbated following his mother's sudden death due to substance use overdose when he was nine years old.

After his mother died, the participant's father reported having to manage extreme "anger outbursts" and argumentativeness, and that his son was "bullied" by his peers for not having a mother. The participant emphasized getting into arguments at school with others and often expressing his frustrations through outbursts involving explosive swearing and hitting or throwing "things." His father described understanding and supporting his son's emotional

reactions and defiance towards his peers, and authority figures, as a way to “teach him how to stand up for himself.” Thus, his father may have inadvertently reinforced oppositional behaviors with empathy and support (Frick *et al.*, 1992). The participant described himself as a person who “only focuses on himself” and is “critical of others,” which likely interfered with his ability to receive reinforcement from others. Reinforcement deprivation has consistently been found to increase aggressive behavior and interfere with rational thought (Azrin, Hake, & Hutchinson, 1965; Azrin, Rubin, & Hutchinson, 1968; Hake, Azrin, & Oxford, 1967). His coach described him as a person who "shuts off" when he is receiving criticism, and he indicated having uncontrollable anger when things don't go his way (e.g., umpires make a bad call, teachers forget to help him on assignments). These behaviors are conceptualized to distract attention from skill deficits. For instance, yelling at an umpire for calling a strike distracts attention of others from his inability to hit the ball to undesired actions associated with his anger (e.g., attempts to calm him after he throws the bat). Thus, he is inherently reinforced to experience anger in addition to behaviors associated with “anger outbursts.” The process of criticizing and arguing with others involves a similar reinforcement contingency (i.e., temporarily removes positive punishers, such as criticism or focus on poor performance). These behaviors prevent opportunities for skill development and experience of positive reinforcement, and exacerbate problem behavior in other contexts (school, home) through stimulus generalization (e.g., criticizing teachers, failing to submit homework assignments).

Remediation was thus aimed at improving the participant’s concentration through cognitive and behavioral skills (e.g., objective thinking, perspective taking, focusing on the task at hand rather than outcomes, thought stopping, solution generation, positive imagery, scheduling, note taking, perspective taking, social skills specific to asking for reinforcers and

responding to upset, recognition of antecedent triggers to undesired behavior). Performance planning also involved teaching the parent and coach to differentially reinforce desired behaviors while ignoring undesired ones. Skill targets for oppositional behaviors (e.g., arguing with authority figures, being critical of others, losing one's temper, being angry often) towards others may be addressed by improving his positive outlook through the use of compliments and ignoring undesired behaviors, and solution generation and evaluation of potential consequences), and improving skills specific to objective/rational thinking through diaphragmatic breathing, focusing on the task at hand rather than outcomes which are influenced by chance factors outside his control, and taking others' perspectives.

### **Intervention**

The participant completed 12 one-hour meetings with a clinical psychology graduate student trained in TOPPS. The intervention focused on optimizing mental health, relationships, and performance in life. The principles, therapeutic style, and overarching procedures of TOPPS interventions were consistent with those used in Donohue *et al.* (2021). Table 3 summarizes the intervention components implemented with the participant, including their anticipated usefulness in addressing ADHD and ODD.

During Meeting 1, a standardized Program Orientation was conducted to provide an overview of the program, discuss expectations, and gather information regarding the referral. Additionally, the participant and the father discussed potential significant others to involve in future sessions (his sister and coach). The Performance Timeline component was subsequently implemented to build treatment engagement and allow the participant to take away skills from the first session. The performance scenario rehearsed in the performance timeline was optimizing his focus while running with teammates during training who distracts him. The participant

required modeling to implement visual and verbal rehearsal of the scenario after brainstorming factors influencing his performance. The provider also reviewed diaphragmatic breathing. The participant, his father, and the provider generated goals from the Performance Timeline, such as strengthening his legs, running  $\frac{3}{4}$  of a mile each week, and practicing diaphragmatic breathing.

Meeting 2 involved reviewing pre-intervention assessment results for the SIC to identify the participant's strengths and elevated goal-worthy items in preparation for establishing goals in the Dynamic Goals and Rewards intervention. The participant's item elevations clustered around the program's global goals of maintaining optimum mental wellness, maintaining optimum relationships with others, and maintaining optimum effort in school-related activities. Further, the participant and his father emphasized goals surrounding optimum effort in sport-related activities, given his motivations to play baseball at the collegiate level. Specific goals that were initially developed for maintaining optimum mental wellness included maintaining optimum focus, maintaining optimum sleep, and eating well. Specific goals that were initially developed for maintaining optimum relationships with others included being respectful to teachers and teammates, uplifting teammates at practice, and being praiseworthy to others. Specific goals that were initially developed for maintaining optimum effort in school-related activities included turning in schoolwork on time, asking teachers and peers for help if needed, and taking notes to promote focus in class. Finally, specific goals that were initially developed for maintaining optimum effort in sport-related activities included consistently attending hitting lessons, practicing breathing, and consistently working out. The participant and father both agreed on food (e.g., sushi dinner) as a reward for future goal accomplishment. Meeting 2 also involved prioritizing intervention components for the rest of the program. Notably, the participant and the father prioritized Self-Control to assist in his challenges in controlling his angry emotions.

The participant's skills in negative assertion were targeted in Meetings 3-6 using the HEARD intervention component. In Meeting 3, the provider first modeled for the participant how to use the HEARD method in responding to criticism utilizing the scenario of a coach coming up to him on the mound and communicating that he should take a break (see Appendix B for prompt). The provider solicited what was liked about how the provider modeled HEARD and then allowed the participant to practice the HEARD steps in his style. At each meeting, the provider and father praised the participant for each of the steps the participant performed optimally. The provider and participant practiced the scenario about the coach for three sessions until mastery was demonstrated by achieving all the 5 HEARD steps. In meetings 5 and 6, the provider applied a different scenario about his teammate (see Appendix B for prompt). Once mastery was demonstrated for this scenario, the provider transitioned to positive assertion training for Meetings 8-12.

In addition to HEARD training, Appreciation Exchange was implemented in Meeting 3 with the participant's sister and father to develop the participant's communication skills in expressing appreciation to supportive others. All expressed that it was a positive experience to hear appreciation from one another directly, and the participant reflected that it improved his mood. Dynamic Goals and Rewards were implemented in Meetings 3-6 as well. Each meeting, the provider would challenge the participant to brainstorm more optimal ways of achieving goals and including supportive others in assisting in goal development. In Meetings 3-6, the participant emphasized the benefits of diaphragmatic breathing, note-taking, utilizing online resources for schoolwork, healthier diet, completing assignments on time, increased class participation, consistency in working out and practices, keeping perspective, and visualization.

Meetings 5-6 focused on targeting the participant's anger outbursts and inattention through Self-Control. The provider modeled the Self-Control steps for the participant using a scenario that the participant said had triggered his anger in the past (a bad call by an umpire). The participant and father expressed they liked having steps the participant can follow and practice in future situations. Another scenario practiced in Meeting 6 included taking exams. In Meeting 6, the participant reported using self-control outside of the meeting when playing video games, whereby he indicated the diaphragmatic breathing was the most helpful step.

Consistent with multiple-baseline methodology, the second phase of intervention (Meetings 7-12) continued to target social skills, with positive assertion being targeted for the first time. The Positive Request intervention was utilized in Meetings 7-11 to teach the participant how to make requests of others while avoiding arguments (e.g., succinct requests for specific actions, when actions are desired, offers to assist, statements of appreciation, acceptable alternatives). The provider first modeled the Positive Request steps for the participant, and then the participant engaged in role-playing scenarios with his father (meetings 7-8) and coach (meetings 9-10). Examples included:

- Making requests from his dad.
- Asking his teacher for help.
- Asking his coach to spend time with him after practice to assist in extra training.

Both the participant and his father agreed that they liked how respectful the steps are to the person receiving the positive request. The participant mentioned using the positive request outside of sessions, such as asking his teacher for help on an assignment and making requests to his friends when playing videogames.

A conflict occurred in meeting 10, where the participant had missed a game without notifying his coach. The provider invited the coach with the participant's permission to attend meeting 10 to address the conflict between the participant and his coach in session. While the participant was upset about the interaction in the session, the coach, participant, and provider were able to maintain the therapeutic alliance and respond positively moving forward in future meetings. The participant utilized HEARD skills from phase 1 in this interpersonal conflict with his coach.

Dynamic goals and rewards were implemented each meeting to assess goal accomplishment and challenge the participant to improve his goals. Goals emphasized achieving were staying proactive on his schoolwork, eating healthier foods and making better meal choices, improved sleep habits, increased visualization, and increased use of diaphragmatic breathing.

Self-control was also implemented in Meetings 7, 9, 10, and 11 to continue targeting the participant's anger and inattention. The participant again emphasized how useful the diaphragmatic breathing component of the intervention has helped him outside of the session (e.g., during baseball practice after making an error).

### **Intervention Integrity**

To ensure implementation integrity, several strategies were employed, including documentation of techniques used during each session, the participant's ratings of engagement and progress towards personal and programmatic goals; ongoing clinical supervision by a licensed psychologist (i.e., review of selected audio-recordings, corrective feedback); 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 the participant's 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 as per the provider's self-report were computed, thus serving as validity estimates for protocol adherence.
2. Ten percent of the session audiotapes rated by the provider for intervention completion were randomly selected and similarly reviewed by independent raters. Inter-rater agreement was computed by adding the number of steps agreed upon by the provider and independent rater and dividing this result by the number of steps agreed upon and disagreed upon by the provider and independent rater  $\times 100$ ). Seventy percent protocol adherence and inter-rater agreement is considered Satisfactory.

## CHAPTER 4

### RESULTS

**Protocol Adherence.** The overall protocol adherence across 12 sessions was 99% ( $SD = 3.34\%$ ,  $range = 84-100\%$ ), according to the provider. Inter-rater agreement between the provider and independent rater was 97.1% ( $range = 83-100\%$ ). Thus, the intervention components in this study were implemented with high reliability (see guidelines from Bellg *et al.*, 2004).

**Consumer Satisfaction and Engagement Ratings.** Following completion of TOPPS, the participant reported high satisfaction with the intervention components, as indicated by the Athlete Helpfulness Rating Scale with an average score of 6.85 ( $SD = .36$ ). The provider rated the participant's engagement with each intervention component (based on attendance/promptness, participation, conduct, and home assignment completion) 98.5% optimal. The client also reported high satisfaction with the services received, as indicated by the CSQ-8 with a total score of 32. The participant attended 100% of the scheduled meetings.

#### Primary Analyses

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

**Phase 1: Evaluation of HEARD, Self-Control, & Dynamic Goals and Rewards.** A three-week baseline was established for the participant's social skills in negative assertion and positive assertion. After implementing HEARD training, the participant's negative assertion skills abruptly improved and reached peak performance in probe 6. The participant met four out of the five criteria consistently for HEARD from probe 6 and onwards. While the participant didn't meet the criterion of Ask for Solutions in his role plays, he still provided solutions in a

respectful way. The quality of the participant's skills demonstrated for negative assertion was evaluated using an optimization scale (0 = *non-optimal*, 100 = *completely optimal*) and was demonstrated to improve over time. Inter-rater agreement between the provider and independent raters for the quality of the participant's skills demonstrated for negative assertion was 99.3% (*range* = 87.5-100%). As hypothesized, the participant's negative assertion skills improved while his positive assertion skills demonstrated minimal improvement.

***Phase 2: Evaluation of Positive Request Training, Self-Control, & Dynamic Goals and Rewards.*** After implementing Positive Request training, the participant's positive assertion skills abruptly improved and reached peak performance in probe 10. The quality of the participant's skills demonstrated for positive assertion was evaluated using an optimization scale (0 = *non-optimal*, 100 = *completely optimal*) and demonstrated improvement over time. Inter-rater agreement between the provider and independent raters for the quality of the participant's skills demonstrated for positive assertion was 92.3% (*range* = 80-100%). As hypothesized, the participant's positive assertion skills improved while his negative assertions skills sustained throughout phase 2.

**Post-Intervention and 1-Month Follow-Up.** The reliable change index (RCI; Jacobson & Truax, 1991) was used to consider the significance of pre-intervention to post-intervention assessment score improvements for the SCL-90-R and SIC (primary outcomes). The RCI helps determine if the clinical change is significant beyond the standard error of measurement. It considers a participant's pre-and post-test change while considering general measure reliability and standard error of measurement. RCI scores greater than 1.96 reflect changes in scores that are meaningful. As per the Reliable Change Index, the participant evidenced significant and meaningful reductions in his SIC Training and Competition total scores both pre- to post-

intervention and pre- to 1-month follow-up. He also evidenced significant and reliable reductions in the SCL-90-R Global Severity Index pre- to post-intervention. Reliable Change Index scores are listed in Tables 1 and 2.

A post-intervention KSADS interview was conducted to determine if the participant still evidenced current ADHD and ODD criteria. The post-intervention KSADS interview indicated no indication of clinically significant current ADHD and ODD symptoms. A blind rater conducted the 1-month follow-up KSADS interview. Symptom improvements were sustained.

### ***Secondary Analyses***

Eyeballing procedures (Byrne, 2017) were used to estimate the magnitude of effect for all secondary measures (TLFB, YSR, SPS, SARI, Overall Anger with Coaches, Teachers, and Teammates, Overall Happiness with Coaches, Teammates, and Family, Frequency of Outbursts, and Average Anger over the Last 7 Days) from pre- to post-test and pre-test to 1-month follow-up. Post- and follow-up outcome measures demonstrated improvements from baseline for these measures (See Tables 1 and 2).

### **Complicating Factors**

The participant initiated intervention with considerable motivation to improve his sports performance and regulate his anger. However, he initially lacked the motivation to improve his social skills. His motivation to improve communication with others was low. To enhance his motivation, the provider incorporated significant others such as his father, sister, and coach, to model the importance of effective communication skills. The participant later acknowledged how learning these skills improves his mood, communication, and emotional regulation. Finally, standardizing the provider's prompts for the negative assertion role play assessments made it difficult to create a natural dialogue in which HEARD is typically used in.

## **Access and Barriers to Care**

As a method reducing COVID-19 contraction, video-conferencing was utilized. There were additional benefits of video-conferencing. First, given that adolescent athletes and their parents have busy schedules, video-conferencing allowed for ease of access to the meetings and limited travel time. Additionally, video-conferencing allowed the participant and provider to search for resources on the internet in real time. One of the challenges was that the participant and his father did not have access to printers at home. The provider was able to address limited access to printers through the use of e-mailing virtual documents prior to the meetings and using the screen share feature for worksheets and homework during the meetings. Lastly, the screen also occasionally froze for a few seconds. However, provider addressed this by having the participant's phone number as a back-up in the event that the software glitched.

## CHAPTER 5

### DISCUSSION

#### **Performance Programming Implications of the Case**

This case study permitted an evaluation of the effectiveness of a sport-specific Family Behavior Therapy (FBT) with an adolescent athlete diagnosed with predominantly inattentive ADHD and ODD. Multiple-baseline results revealed substantial reductions in problem behaviors and symptoms and improvements in social skills after being targeted with specific intervention components. Initiating Positive Request and HEARD was associated with improved social skills in positive and negative assertion, respectively. Initiating Dynamic Goals and Rewards and Self-Control was associated with improved mood, academic functioning, and focus. Consistent with prior research (Bresten & Eyberg, 1998; Conant-Norville & Tofler, 2005; Evans, Owens, & Bunford, 2014), these findings suggest that social skills training and setting, monitoring, evaluating, and rewarding desired behaviors with the inclusion of significant others is effective for adolescents with ADHD and ODD in developing effective skills. The participant also expressed improvement in sports performance. These gains were reportedly maintained from pre- to post- and pre- to follow-up assessments. Given that the participant attended 100% of scheduled sessions and rated the program highly, this indicated that TOPPS's sport-specific component demonstrated effective engagement for an adolescent athlete with ADHD and ODD. This demonstrates how connecting with a client's passions may contribute to increased engagement.

TOPPS intervention components are capable of handling multiple cognitive-behavioral problems. TOPPS is a program that's capable of addressing multiple diagnostic symptoms. In choosing the respective 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. The treatment plan takes into consideration the client's goals while addressing the presenting diagnostic symptoms. Therefore, the treatment provider would emphasize their client's respective disorder, and when multiple diagnosis are present as in the current case, it'd be prudent to be inclusive of scenarios for the relevant diagnostics in each intervention component. The treatment planning and performance planning are inherently built into the prescribed protocols. However, there is still the need to effectively adapt the treatments for any given disorder. Further, because TOPPS focuses on goals in both sports and life, the provider was able to teach the participant skills that could be applied in life outside of sports (e.g., communication skills with teachers or potential employers) in the event that he may eventually stop playing his sport.

Additionally, TOPPS was able to be delivered fully through video-conferencing, which was consistent with the findings from Boelen (2020). This indicates that TOPPS is an intervention that addresses the need for adaptable and effective behavioral interventions that minimize the risks of contraction of COVID-19 (Zhou *et al.*, 2020).

### **Recommendations to Clinicians and Students**

This case study describes a comprehensive approach to intervention with an adolescent student-athlete utilizing an evidenced-based intervention and integrating empirical research findings. Although the participant was initially ambivalent about improving his social skills, motivating factors unique to his athletic status were integrated into intervention planning, such as his sports performance and his coach's involvement. Systematically involving his coach and sister improved the participant's social skills and improved his ability to regulate his emotions when communicating with others. Additionally, clinicians and students are recommended to be

familiar with the software they are using if they plan to implement this intervention through video-conferencing (Mace, Boccanelli, & Dormond, 2018).

In summary, this case study supports the efficacy of a sport-specific adaptation of FBT in concurrently improving social skills, sport performance, and mental health. Therefore, given the absence of evidence-based interventions to assist athletes in the aforementioned target areas, TOPPS offers promise for TOPPS in adolescent athletes with ADHD and ODD. In addition to the current case, the development of TOPPS has included focus and implementation groups with ethnic/racial minority youth and a case report (Donohue *et al.*, 2021). The lack of mental health interventions available for ethnic/racial minority and low-income youth athletes demonstrate a need for intervention development to address this healthcare disparity (Donohue *et al.*, 2021). Therefore, it will be important to elevate evaluative methodology for TOPPS in additional case trials involving ethnic/racial minority youth athletes with various mental health diagnoses, multiple-baseline methodology, and clinical case trials (Kooistra *et al.*, 2009; Rounsaville, Carroll, & Onken, 2009).

APPENDIX A  
TABLES AND FIGURES

Table 1

*Pre-, Post- and Follow-up Assessments of Mental Health*

Scale	Pre- Intervention	Post- Intervention	1-Month Follow Up	Post-Intervention Reliable Change Index	1-Month Follow Up Reliable Change Index
<b>The Symptoms Check-List-90-Revised (SCL-90-R; Derogatis, Rickels, &amp; Rock, 1976; T scores).</b>					
Psychoticism	64	44	44		
Obsessive-Compulsive	76	39	39		
Paranoid Ideation	56	41	41		
Interpersonal Sensitivity	58	41	41		
Anxiety	69	40	40		
Phobic Anxiety	59	47	47		
Depression	59	38	38		
Hostility	81	41	41		
Somatization	79	37	37		
Global Severity Index	72	34	34	19.00*	19.00*
<b>Beck Depression Inventory-II (BDI-II; Beck et al., 1996)</b>					
Total Score	4	0	1		
<b>Suicide Probability Scale (SPS; Larzelere, Smith, Batenhorst, &amp; Kelly, 1996)</b>					
Probability Score	12	0	0		
Total T-Score	43	18	18		
<b>Timeline Follow back</b>	0	0	0		
<b>Youth Self Report</b>					
<b>Total Problems</b>	60	43	35		
<b>Externalizing Problems</b>	65	37	40		
Aggressive Behavior	68	50	50		
Rule-Breaking Behavior	58	50	51		
<b>Internalizing Problems</b>	48	44	30		
Anxious/Depressed	54	52	50		
Withdrawn/Depressed	50	50	50		
Somatic Complaints	52	51	50		
<b>Non-internalizing &amp; Externalizing problems</b>					
Social Problems	54	50	50		
Thought Problems	55	53	50		
Attention Problems	73	51	50		
<b>Total Competence</b>	30	35	35		

Social	64	44	44
Activities	39	35	39
<b>Frequency of Outbursts</b>	2	0	0

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*Note.* Reliable Change Index (RCI) > 1.96 is considered significant. Significant RCIs are

signified with an asterisk\*. The Total Competence subscale for the SCL-90-R is reversed scored.

Table 2

*Pre-, Post- and Follow-up Assessments of Factors Interfering with Sport Performance*

Scale	Pre-Intervention	Post-Intervention	1-Month Follow Up	Post-Intervention Reliable Change Index	1-Month Follow Up Reliable Change Index
<b>SIC Training</b>					
Total	86	41	43	7.23*	6.91*
Thoughts and Stress	1.17	1	1		
Academic	2.33	2	1.67		
Injury	3	1.33	1		
Team Relationships	2.5	1	1		
<b>SIC Competition</b>					
Total	56	41	42	2.37*	2.21*
Thoughts and Stress	1.75	1	1		
Academic and Adjustment	2.33	1	1.33		
Motivation	1.00	1	1		
Overly Confident/Critical	3	1,00	1		
Injury	3	1	1		
Pain	2	1.5	1		
<b>SIC Outside of Sport</b>					
Total	64	41	43		
<b>Yes Responses to Seeing a Professional</b>	-Maintaining an acceptable grade point average -Difficulty concentrating or maintaining focus on the task at hand	-N./A	N/A		
<b>SARI Teammates</b>					
Relationships and Support	1.83	1	1		
General Pressure	1.75	1	1		
Team Playing and Competitiveness	3.5	1	1		
Relationships	1.25	1	1		
Pressure to drink& interfere during competition	1	1	1		
Total	32	18	18		
<b>SARI Family</b>					
Poor Relationship and Lack of Support	1.00	1.00	1.00		
General Pressure	1.17	1.00	1.00		
Pressure to Quit or Continue Unsafely	1.00	1.00	1.00		
Comments and Negative Attitude	1.00	1.00	1.00		
Total	17	16	16		
<b>SARI Coaches</b>					

Relationships and support	1.44	1.00	1.11
Teamwork and Safety	1.00	1.00	1.00
Involvement	2.50	1.00	1.00
Experiencing Demands	1.67	1.00	1.00
Total	31	19	20
<b>SARI Peers</b>			
Poor Relationship and Lack of Support	2.00	1.00	1.00
Use of Recreational and Performance-enhancing Substances	1.33	1.00	1.00
Total	18	10	10
<b>Overall Happiness with Family, Coaches, Teammates and Peers</b>			
Family	100%	100%	100%
Coaches	100%	100%	100%
Teammates	90%	100%	100%
Peers	80%	80%	100%

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*Note.* Reliable Change Index (RCI) > 1.96 is considered significant. Significant RCIs are signified with an asterisk\*.

Table 3

*TOPPS Intervention Components Descriptions*

Adult Intervention Component	Prescribed changes for Adolescent Athletes (Donohue <i>et al.</i> , 2021)	Intervention Components Implemented to Address ADHD and ODD
<b>Therapeutic style*</b> : Passionate encouragement, descriptive praise for actions and character attributes, ignore undesired behaviors, use of humor, behavioral rehearsal, and non-stigmatizing, achievement-oriented nomenclature.	N/A	N/A
<b>Meeting agendas*</b> : In the meeting agendas, athletes determine which intervention components to prioritize with input from significant others (family, coach, etc.).	Significant others (particularly adults) given greater discretion in the intervention selection and decision making.	N/A
<b>Performance orientation*</b> : In the performance orientation, content of each intervention and general meeting structure/format is reviewed, the communication guidelines are established, the optimization approach to performance is conceptualized, and ambitions, expectancies, and potential benefits are reviewed.	Communication guidelines adapted to facilitate greater deference to adults, simplified rationale for optimization model, more emphasis on participant's ambitions.	N/A
<b>Cultural enlightenment</b> : The Semi-Structured Interview for Ethnic and/or Sport Consideration in Therapy Scale (SSIECTS/SSIESCTS; Donohue, Strada <i>et al.</i> , 2006) reviews how ethnic and sport cultural issues may impact intervention (Donohue, Strada, <i>et al.</i> , 2006).	Greater encouragement from adult significant others in providing cultural input about earlier generations.	N/A
<b>Dynamic goals and rewards*</b> : In dynamic goals and rewards, assessment findings are reviewed to generate goals that are monitored and contingently reinforced by significant others daily.	An appendix was added to the dynamic goals and rewards intervention protocol checklist to include generic examples of goals (e.g., "avoid drug use" was adapted to "maintaining optimum intake").	Overarching goals were not altered although sub-goals and reviewed situations were more relevant to ODD and ADHD symptomology, such as maintaining concentration on the task at hand, responding effectively to others, using diaphragmatic breathing to stay calm and focused during stressful situations, etc.

<p><b>Performance timeline*:</b> In the performance timeline, athletes choose current situations in their performance that could be optimized. A standardized form helps the athlete rapidly identify the most relevant period (e.g., before training) and most important factors (e.g., thoughts, interpretation of perceptions, and training/strategy) influencing their performance. Additionally, the athlete and significant others brainstorm and rehearse optimal behaviors and thoughts relevant to the performance scenario.</p>	<p>N/A</p>	<p>The reviewed situations and factors impacting performance were specific to ADHD and ODD symptomology. For instance, situations tended to be focused on resolving argument with authority figures (e.g., coaches and teachers). Factors impacting performance were typically specific to thoughts, emotions, physical sensations, and interactions with others.</p>
<p><b>Performance planning*:</b> In performance planning, the athlete and significant others prioritize intervention components to be delivered in subsequent meetings sequentially and cumulatively based on priority.</p>	<p>N/A</p>	<p>N/A</p>
<p><b>Goal inspiration:</b> In goal inspiration, the athlete reviews negative consequences of undesired thoughts and behaviors while the performance coach empathizes and prompts positive consequences for goal achievement.</p>	<p>Only the positive consequences are reviewed.</p>	<p>N/A</p>
<p><b>Communication skills training*:</b> In communication skills training, the athlete and significant others are prompted to exchange statements of appreciation and to initiate positive requests when disagreements or desired actions occur. The athlete also learns how to respond to others using the HEARD (Hear, Empathize, Ask, Review, Decide) skill.</p>	<p>Encouraging greater input from significant others.</p>	<p>This intervention emphasized role-playing specific social situations that are impacted by ADHD and ODD symptomology. For example, role-plays tended to focus on responding effectively to criticism from authority figures (e.g., coaches) and peers and making positive requests to authority figures (e.g., teachers) respectfully.</p>
<p><b>Dream job development:</b> In dream job development, the athlete is assisted in constructing their “dream job” with support from others, generates potential goals and resources to encourage vocational ambitions, and reviews positive aspects about the desired vocation.</p>	<p>More focus on developing aspects of the athlete’s dream job and prompting significant others to generate resources to assist athlete in career development.</p>	<p>N/A</p>
<p><b>Job-getting skills training:</b> In job-getting skills training, the athlete is taught to solicit job interviews utilizing effective strategies and to enhance job interviewing and application skills.</p>	<p>More focus on importance of soliciting job interviews and greater modeling and behavioral rehearsals with significant others for job solicitation calls and interviews.</p>	<p>N/A</p>
<p><b>Financial management:</b> In financial management, the athlete is taught to determine their income and expenses using a financial worksheet plan and increase income and decrease expenses immediately and in the future.</p>	<p>Greater inclusion of adult significant other to clarify financial facts and provide realistic solutions.</p>	<p>N/A</p>

**Environmental control:** In environmental control the athlete brainstorms and records people, places, activities, and emotions compatible and incompatible with goal attainment. Future environmental control meetings review optimum actions and thoughts that occurred or could have occurred to facilitate goal achievement

Handouts adapted to include more developmentally appropriate examples (e.g., “being around bars” was removed from the Things That Might Interfere with Goal Accomplishment handout).

N/A

**Self-control\*:** In self-control, the athlete is taught to identify initial thoughts that eventually lead to undesired actions and engage in a series of alternative actions that facilitate goal accomplishment, including a focus on the task at hand, reviewing negative consequences associated with the performance of undesired actions, cue-controlled relaxation and diaphragmatic breathing, generation of goal-oriented actions, and imagining goal accomplishment.

Greater emphasis on reviewing positive consequences for goal accomplishment and eliminating negative consequences associated with undesired actions.

Self-control gives the athlete with ADHD and ODD skills in identifying triggers that might contribute to their inattentiveness and hostility and brainstorm ways on how to relax and problem solve.

**Meeting conclusion\*:** In the meeting conclusion, athletes review beneficial aspects of skills practiced in the meeting, methods of assuring completion of practice assignments, and how and who should be involved in the next meeting.

N/A

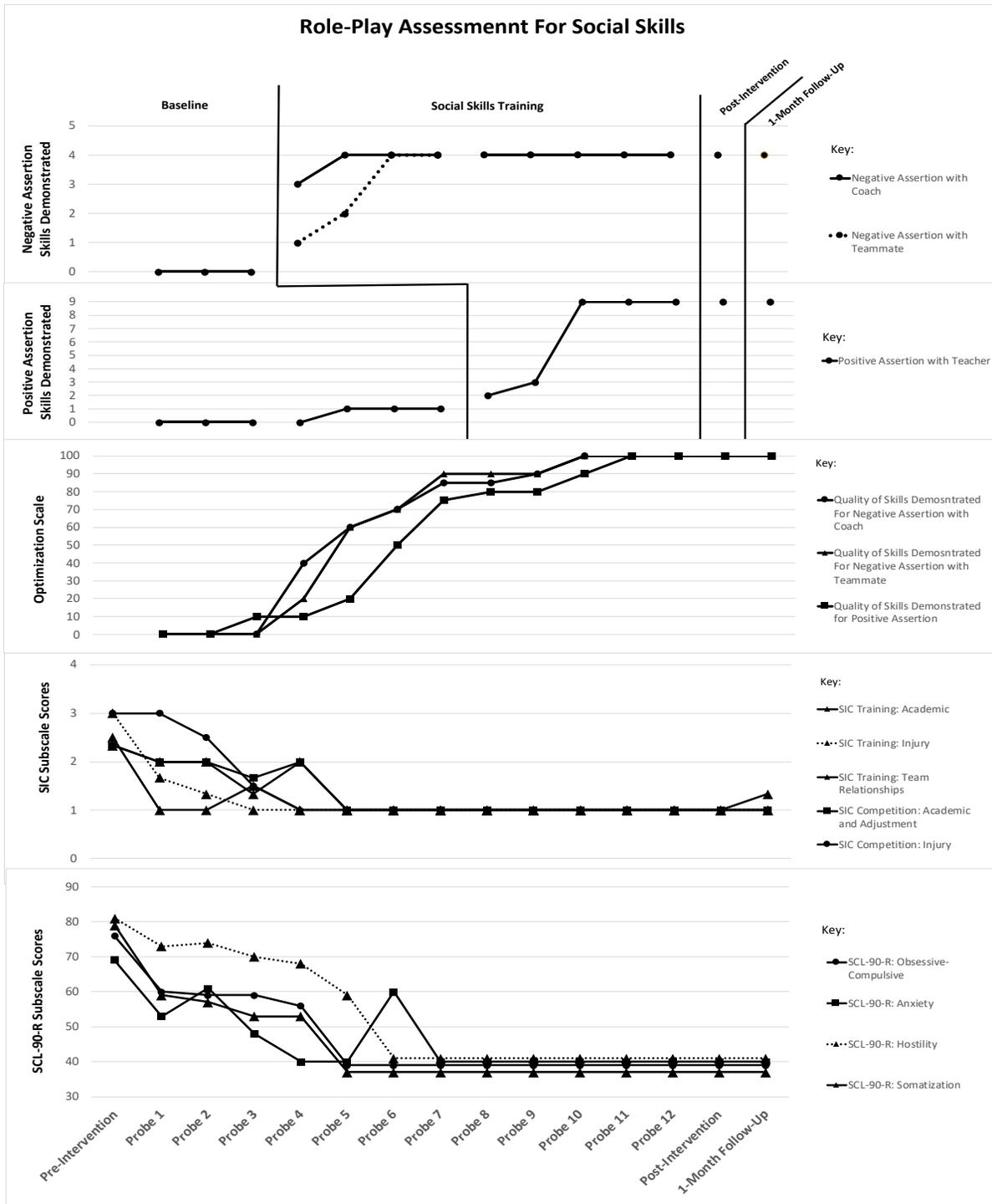
Similar to the meeting agenda, the conclusion gives the athlete autonomy in how they might want their next session to be planned and who might they want to involve, increasing engagement.

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*Note.* Intervention components that were implemented are signified with an asterisk\*.

Figure 1

Multiple Baseline Figure for the Role-Play Assessments for Social Skills



## APPENDIX B

### ROLE PLAY PROMPTS

#### *Positive Assertion with Teacher:*

You ask your teacher for help on Monday, and he says he'll get back to you. On Wednesday he still hasn't got back to you. Imagine I'm the teacher, and the class has just been dismissed. I come up to you and say "hey, how's it going?"

(After 3 seconds of silence): "What do you think?"

#### *Negative Assertion with Coach:*

You're in practice and you throw a pitch that you think is a strike, but your coach calls it a ball and the batter walks. This is the second time your coach has made a call you disagreed with.

Imagine I'm the coach and for the third time I call a ball that you think is a strike. Imagine I'm the coach and I say: "I think it's time for you to come off the mound and take a break."

(After 3 seconds of silence): "We have to find ways to help you throw more strikes. What do you think?"

#### *Negative Assertion with Teammate:*

Your teammate makes a costly error while you're pitching during a game. Later in the game he makes a similar error again. Later, between innings you are sitting next to him on the bench.

Imagine I'm this teammate and I say, "I really screwed up out there."

(After 3 seconds of silence): "I just gotta make less errors"

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## CURRICULUM VITAE

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### **EDUCATION**

**2016 – 2019 B.A. Psychology, B.A. Philosophy - Florida International University**

**2019 – 2024 Ph.D. Clinical Psychology – University of Nevada, Las Vegas (APA Accredited) –**

**Proposed Thesis:** A Family-Based Optimization Intervention Implemented through Video-Conferencing to Address ADHD and Oppositional Defiant Disorder in an Adolescent Athlete: A Controlled Evaluation

**Advisor -** Dr. Brad Donohue

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### **PUBLICATIONS**

#### **Submitted and accepted:**

1. Donohue, B., **Phrathep, D.** (2020). Mental Health in Sport. In M. Lang (Eds.), *The Routledge Handbook for Athlete Welfare*. Ormskirk, England. Routledge.
2. Donohue, B., Kowal, I., **Phrathep, D.** (in press). Mapping it Out – Goal Setting. In S. Shepphird (Eds.), *Sport Psychology Workbook*. Oakland, California. New Harbinger.
3. Donohue, B., **Phrathep, D.**, Stucki, K.,..., Allen, D. (2021). Adapting an Evidence-Supported Intervention to Optimize Mental Health and Sport Performance in Youth from Ethnic/Racial Minority and Low-Income Neighborhoods: A National Institutes of Health Stage Model Study.

#### **In preparation:**

1. **Phrathep, D.**, Donohue, B., Kowal, I. (In preparation). A Family-Based Optimization Intervention Implemented through Video-Conferencing to Address ADHD and Oppositional Defiant Disorder in an Adolescent Athlete: A Controlled Evaluation.
  2. **Phrathep, D.**, Donohue, B., Kowal, I. (In preparation). A Family-Based Optimization Intervention Implemented through Video-Conferencing to Address Major Depressive Disorder and Suicidal Ideation in a Latina Adolescent Athlete.
  3. Lefforge, N., **Phrathep, D.**, Habashy, J., Baggio, M., Black, A., Strong, M. (In preparation). Education and Training Guidelines for Group Psychology and Group Psychotherapy.
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### **PRESENTATIONS**

#### **Verbal Conference Presentations:**

1. Kowal, I., **Phrathep, D.**, Griffin, E., & Janeo, M. (2020, January). *Optimizing Communication Through Evidence-Supported Interventions for Athletes*. Workshop conducted at the annual conference of the Center for Performance Psychology, National University's Sanford Education Center, Carlsbad, CA.
2. **Phrathep, D.** (2019, August). *A Literature Review of Mental Health Assessments and Interventions Relevant to Baseball Players*. Oral presentation conducted at the Sabermetrics, Scouting, and the Science of Baseball seminar, Boston University, Boston, MA.

3. Lefforge, N., Black, A., Baggio, M., Habashy, J., **Phrathep, D.**, Strong, M. (2020, August). *Essential Training to Build a Successful Group Psychotherapy Program*. Symposium conducted at American Psychological Association Annual Conference, Virtual.

### **Poster Presentations:**

1. **Phrathep, D.**, Donohue, B., Kowal, I. (2020, October). *Initial Feasibility of an Evidence-Supported Approach to Mental Health and Sport Performance in Youth Athletes*. Poster presentation conducted at the Association for Applied Sport Psychology, Virtual Conference.

### **Other Verbal Presentations:**

1. Donohue, B., **Phrathep, D.** (2019, August). *The Optimum Performance in Sports Question and Answer Session*. Oral presentation conducted for the Fabulous Sin City Rollergirls team, Las Vegas, NV.

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## **CLINICAL TRAINING**

**Direct Intervention:** 165 Hours

**Direct Assessment:** 66.5 Hours

**Supervision Received:** 250.5 Hours

### **2020 - Current: The PRACTICE**

**Background information:** UNLV Community-based mental health training clinic

**Patient age range seen:** 9-74 years old

**Individual Therapy Modalities:** CBT for depression and anxiety; DBT Skills for self-harm and suicidal ideation; Cognitive Processing Therapy; Written Exposure Therapy; Problem Solving Therapy for Older Adults; DBT Skills for interpersonal effectiveness

**Group Psychotherapy Co-Facilitation:** DBT Skills Group for Adults; Real Talk Teen Group

**Assessments Administered:** WAIS-IV, WJ-ACH-IV, WMS-IV, CPT-3, RBANS, D-KEFS, SCID-5, SCID-5-PD, NDRT, PAI, PID-5, CAMS SSF-III; BAARS-IV, TOMM

### **2019 - Current: The Optimum Performance Program in Sports**

**Background information:** Significant-other supported behavioral (Family Behavioral Therapy/Cognitive Behavioral Therapy oriented) treatment for collegiate athletes with substance use disorders as part of a NIDA-funded RCT. Current manual is being adapted and implemented in case trials with adolescent athletes.

**Intervention components:** Dynamic Goals and Reward, Performance Planning, Positive Request, Reciprocity Awareness, Environmental Control, Self-Control, Job-Getting Skills Training, Financial Management, Career Planning, Goal Inspiration, Performance Timeline

**Patient age range seen:** 8-17 years old

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## **COMMUNITY CONSULTATIONS**

### **2019 - 2020: HEROS Project – Project Coordinator**

**Responsibilities:** Prepare and lead training of The Optimum Performance Program in Sports, which is an intervention designed by Dr. Bradley Donohue. Additional responsibilities included supervising the community providers on implementation of the interventions. This training is provided to the HEROS group that is an after-school program providing services to an underserved population in Las Vegas, Nevada.

### **SELECTED ACTIVITIES**

**August 2020 - Current: Program Coordinator, The Optimum Performance Program**

**Responsibilities:** Coordinate tasks for Graduate and Research Assistants, assist program director in all tasks, lead weekly laboratory meetings, provide TOPPS intervention training to community providers, and lead group supervision meetings.

**August 2019 - Current: Performance Professional, The Optimum Performance Program**

**Responsibilities:** Conduct clinical case trials, coordinate clinic activities, write and disseminate clinical research

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### **PROFESSIONAL AFFILIATIONS**

**2017-Present** Graduate Student Member of the American Psychological Association

**2017-Present** Graduate Student Member of the Applied Association for Sport Psychology

**2017-Present** Graduate Student Member of Division 47 (Sport, Exercise, Performance Psychology) of the American Psychological Association

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### **AWARDS, HONORS, & SCHOLARSHIPS**

**2020** Student Abstract Award for the Association for Applied Sport Psychology 2020 Annual Conference

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