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Concurrent Mental Health and Sport Performance Enhancement in an Athlete Initiating Behavioral Intervention with No Assessed Pathology: A Case Examination Supporting Optimization

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CONCURRENT MENTAL HEALTH AND SPORT PERFORMANCE ENHANCEMENT IN
AN ATHLETE INITIATING BEHAVIORAL INTERVENTION WITH NO ASSESSED
PATHOLOGY: A CASE EXAMINATION SUPPORTING OPTIMIZATION

By

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ABSTRACT

Concurrent Mental Health and Sport Performance Enhancement in an Athlete Initiating Behavioral Intervention with No Assessed Pathology: A Case Examination Supporting Optimization

by

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Collegiate athletes are often exposed to unique environmental stressors that may negatively impact the way they think, behave, and feel in athletic, academic, and social domains, potentially compromising their performance and mental health when cognitive and behavioral skills are relatively underdeveloped. Behavioral interventions have been shown to enhance cognitive and behavioral skills in persons with assessed mental health deficits in the general population. However, little is known about the relative effects of psychologically-based programs in persons who do not evidence pathology. Along these lines, The Optimum Performance Program in Sports (TOPPS), based on Family Behavior Therapy, was recently developed with support from the National Institute on Drug Abuse (NIDA). The Optimum Performance Program in Sports has demonstrated preliminary efficacy in student-athletes formally diagnosed with mental health and substance use disorders, but it has not been evaluated in student-athletes who are interested in optimizing their mental health and sport performance with no evidence of pathology. Therefore, in this case examination, an AB experimental design with 1- and 5-month follow-up assessments was utilized to determine the effects of TOPPS on a participant who was interested in optimizing her confidence, motivation, and relationships with coaches and teammates. The participant completed a large battery of psychometrically-validated assessment measures during baseline

and follow-ups to assess the presence or absence of mental health disorders, psychiatric functioning, substance use, days employed, STI risk behaviors, extent to which various factors interfered with her sport performance, and her relationships with teammates, coaches, family, and non-teammate friends. Results indicated that the participant evidenced no significant pathology during baseline, and substantial improvements up to 5 months post-intervention in most domains. In light of the results, treatment implications are discussed, emphasizing the development stigma-free, optimization-driven mental health programs for student-athletes, such as TOPPS.

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CHAPTER 1

LITERATURE REVIEW

Athletes have been indicated to experience unique demands and stressors (e.g., extended travel, public and private criticism) that are likely to interfere with their sport performance (Anshel, Williams, & Williams, 2000) and mental health (Watson, 2005). Evidence-supported treatment programs (e.g., stress management, cognitive restructuring) have been developed to assist mental health in various clinical populations (e.g., Allen & Johnson, 2012; Eseadi, Anyanwu, Ogbuabor, & Ikechukwu-Iloмуanya, 2016; McKay et al., 2015; Novaco & Taylor, 2015; Schnurr et al., 2007; Sharp, Power, & Swanson, 2004). The theoretical underpinnings of these interventions are often guided by a theoretical model in which thoughts, behaviors, and feelings reciprocally influence one another, and thoughts and behaviors are targeted in skill development to assist positive feelings (see Figure 1). This conceptual model has been widely supported in the scientific literature (e.g., Arnberg & Öst, 2014; Covin, Ouimet, Seeds, & Dozois, 2008; Wright, Basco, & Thase, 2006), but not in athletes. Along a similar vein, athletes have been found to reject traditional therapies that are pathologically-focused (López, & Levy, 2013). Some experts have suggested the underutilization of mental health programs in athletes may be due to the poor fit of existing interventions with sport culture and stigma associated with the pursuit of psychological intervention (Donohue, Pitts, Gavrilova, Ayarza, & Cintron, 2013). These findings suggest the development of mental health interventions for athletes that are sensitive to sport culture and performance issues are warranted.

The present case study is focused on refining a novel, culturally sensitive intervention (i.e., The Optimum Performance Program in Sports, TOPPS, Donohue et al., 2015), that has demonstrated efficacy in the enhancement of mental health and sport performance in athletes with substance abuse, to be appropriate with an athlete with no identified pathology or sport

performance deficits. Relevant background information is organized into four sections. The first section will describe stressors experienced by athletes. Second, common performance factors and existing evidence-based intervention strategies to optimize these factors will be reviewed. Third, common factors that have been reported to explain why student-athletes underutilize mental health services will be underscored. Fourth, the need to develop non-pathological approaches to mental health care in athletes will be emphasized. Next, the aforementioned TOPPS intervention will be examined in a collegiate athlete who did not evidence clinically significant mental health or sport performance deficits, but was interested in optimizing her confidence, motivation, and relationships with coaches and teammates. An AB experimental design with 1- and 5-month follow-up assessments was utilized to determine the effects of TOPPS intervention on the participant's mental health, sport performance, and relationships with teammates, coaches, family members, and non-teammate friends.

Stressors

College is a time when individuals are afforded great opportunities to develop their personal competencies, values, identities, and relationships (Howard, Shiraldi, Pineda, & Campanella, 2006). However, collegiate athletes commonly experience demands that are very different from their non-athlete counterparts (Brewer & Petrie, 2014; Martin & Andersen, 2014; Van Rensburg, Surujlal, & Dhurup, 2011). Parham (1993) described numerous examples of uniquely experienced stressors in collegiate athletes, including severe time constraints, the need to maintain health and fitness, social isolation, difficulty satisfying multiple relationships, lack of energy and motivation, lack of money due to restricted financial opportunities, publically displayed criticism from others, and injuries (especially those that can lead to career termination) that place a considerable strain on their ability to fulfill major role obligations. Other examples of

student-athlete specific stressors include intense exertion and labor (Filaire, Bonis, & Lac, 2004; Goodway, 1987); muscle pains and fatigue (Rushall, 1990); the need to maintain eligibility with full course loads while having to be focused on sport competition and practice (Birky, 2007); mental and physical exhaustion and burnout (Ferrante, Etzel, & Lantz, 1996; Smith, 1986); and excessive travel (Waterhouse, Reilly, & Edwards, 2011). High performance expectancies may lead to elevated stress in athletes when their tasks are particularly difficult (Eubank & Gilbourne, 2003).

Successful athletic performance can be compromised by inadequate stress management. Indeed, maladaptive stress coping can affect psychological and physiological processes, such as attentional focus, arousal level, muscle tension, and negative emotions (Anshel et al., 2000). Negative thoughts and emotions may interact to lead to poor performance in both sport and life (Didymus & Fletcher, 2014; Fletcher, Hanton, & Wagstaff, 2012; Nicholls, Polman, Levy, Taylor, & Cobley, 2007), requiring the development of optimal coping skills.

The ability to cope with stressors is a fundamental skill necessary for successful performance (Nicholls et al., 2007). One way coping skills can be optimized is through thought management interventions. Depending on the source of stress, such interventions might focus on positive interpretation of events and reaction to environmental demands (Carpenter, 1992; Otten, 2009); certainty about future career and the direction in life (Gould, Finch, & Jackson, 1993; Gould, Jackson, & Finch, 1993a, 1993b); accurate assessment of body image (Sundgot-Borgen & Torstveit, 2010); replacing perfectionistic thoughts with those that are optimistic (Elison & Partridge, 2012); adjustment to college and academic demands (Broughton & Neyer, 2001); positive relationships (Gould et al., 1993; Gould, Jackson, et al., 1993a, 1993b); and optimal sleeping patterns (Juliff, Halson, & Peiffer, 2015).

Effective stress management may influence the development of adaptive thoughts and behaviors. In athletes, adaptive thoughts and behaviors may act to prevent psychopathologies (Martens, Vealey, & Burton, 1995; Storch, Storch, Killiany, & Roberti, 2005; Weinberg, & Genuchi, 1980; Wilson & Pritchard, 2005; Yang et al., 2007), enhance motivation to achieve optimal sport and life performance (Boto, González, & Márquez, 2008), and assist in the management of problem behaviors, such as substance use, gambling, and abnormal eating patterns (Ellenbogen, Jacobs, Derevensky, Gupta, & Paskus, 2008; Evans, Weinberg, & Jackson, 1992; Sundgot-Borgen, 1994; Sundgot-Borgen & Torstveit, 2010). The high number of unique stressors experienced by athletes warrant further exploration of their effect on performance and potential intervention target areas.

Common Performance Factors and Relevant Evidence-Based Intervention Strategies

Performance in athletes can be influenced by a combination of external and internal factors. Common external factors include relationships within the team (i.e., teammates and coaches) and outside of the team (i.e., family members and peers; Donohue, Miller, Crammer, Cross, & Covassin, 2007) and substance use (Donohue, Silver, Dickens, Covassin, & Lancer, 2007). External factors often have an influence on internal factors, such as cognitions and emotions (Donohue, Silver, et al., 2007; Fletcher et al., 2012; Hanton, Wagstaff, & Fletcher, 2012; Orlick & Partington, 1988; Parham, 1993). Thus, the focus of this section will be on relationships, substance use, goal-setting and motivation, arousal and anxiety, self-talk, and confidence, including methods of enhancing these areas through evidence-based intervention strategies.

Relationships. Interpersonal relationships of athletes with their coaches and teammates uniquely contribute to their well-being and athletic performance (Butt, Weinberg, & Culp, 2010;

Weiss, 2001). For instance, it has been empirically found that the presence, actions, and speech of coaches are instrumental in both the physical and psychosocial development of athletes (Jowett & Cockerill, 2003; Martens, 2012; Smith & Smoll, 1996), as well as the athletes' preparation to overcome mental obstacles (Johnson et al., 2011). A study by Zourbanos, Hatzigeorgiadis, Tsiakaras, Chroni, and Theodorakis (2010) found that supportive coaching behaviors and positive coaching relationships were associated with athletes' positive self-talk (Hardy, Jones, & Gould, 1996), which improved athletic performance by increasing confidence, anxiety control, and competency. The athlete-coach relationship, formed during the coaching process, creates the climate which influences performance goals set forth by the coach and the athlete. Furthermore, Campo, Mellalieu, Ferrand, Martinent, and Rosnet (2012) found that athlete relationships with coaches and teammates influence athletes' emotional state. For instance, negative feedback from coaches and teammates induced negative emotions and perceived stress in an athlete. Athlete and team mood have a positive relationship with athletes' performance (Lowther & Lane, 2002). For instance, Johnson and colleagues (2011) found that teammates who set and attain goals together demonstrate improved group cohesion and positive mood, which in turn may facilitate sport performance (Evans & Dion, 2012; Gould, Guinan, Greenleaf, Medbery, & Peterson, 1999; de Jong, Curşeu, & Leenders, 2014; Mach, Dolan, & Tzafrir, 2010).

Relationships with parents and non-teammate friends also significantly contribute to athletes' performance. Parents have perhaps the greatest influence on athletes' performance by creating a motivational climate that significantly impacts sport-related motivation (O'Rourke, Smith, Smoll, & Cumming, 2011). Donohue, Miller, and colleagues (2007) found that many athletes experience "homesickness" due to extensive separations from their families, and that of

all relationship domains, athletes reported that parents influenced their sport performance as much as their coaches and teammates, and significantly more than their peers. Maintenance of non-teammate peer relationships, nevertheless, can prevent feelings of isolation from society due to relatively large amounts of time spent on team activities (Lett & Wright, 2003).

Behavioral interventions for athletes that involve communication and social skills training may improve relationships, including relationship satisfaction with teammates, coaches, family members, and peers (Chow et al., 2015; Donohue et al., 2015). For instance, team cohesion can be improved through interventions that involve both social skills training and collaborative team goal-setting components (Senecal, Loughhead, & Bloom, 2008). The underscored literature findings emphasize the importance of relationships in the positive adjustment of athletes and imply that therapeutic programs for athletes should include coaches, teammates, family members, and non-teammate friends.

Substance use. A distinct factor that is problematic in the athletic population is substance use. For instance, in comparison to the general population of college students, collegiate athletes report higher levels of substance use (Ford, 2007a; Meilman, Leichliter, & Presley, 1999; Yusko, Buckman, White, & Pandina, 2008). Elite student-athletes more frequently engage in heavy episodic drinking, consume more alcohol, and experience more alcohol-related negative consequences than their non-athlete peers (Martens, Dams-O'Connor, & Beck, 2006; Nelson & Wechsler, 2001; Zamboanga, Rodriguez, & Horton, 2008). Within the athletic population, alcohol, marijuana, smokeless tobacco, and stimulants have been found most prevalent (Green, Uryasz, Petr, & Bray, 2001; Hainline, Beall, & Wilfert, 2014). Alcohol use in student-athletes is positively correlated with illicit drug use, including steroids (McCabe, Brower, West, Nelson, & Wechsler, 2007). Problems associated with marijuana use may become increasingly complex

because this substance has become legal in some states but remains prohibited according to the National Collegiate Athletic Association (NCAA) policies (Kilmer & Holten, 2014) and illegal in high school and professional athletes who are under 21 years old in the United States.

High levels of substance abuse are associated with severe health and sport-related consequences. Health consequences include increased risk of heart attacks, exacerbation of mental health disorders, and deterioration of functioning related to performance, affecting both physiological systems (e.g., impaired speed, steadiness, psychomotor performance) and psychological systems (e.g., decreased attention and motivation, executive functioning and memory deficits; Eckheart, Adolphus, Hendricks, & Wyrick, 2014; Garner, Rosen, & Barry, 1998; Hindmarch, Kerr, & Sherwood, 1991; Kilmer & Holten, 2014; Martens, Cox, & Beck, 2003; Thomas, Dunn, Swift, & Burns, 2010). These impairments often lead to academic problems, relationship problems, criminal behavior and victimization, being hurt or injured, and unplanned or unprotected sex (Ford, 2007b). Furthermore, use of illegal substances may lead to sport-related consequences, such as suspension from sports and loss of scholarship (Mottram, 2010). Experiencing these sport-related consequences might exacerbate the negative effects of stress and strained relationships mentioned previously.

In comparison to non-athlete counterparts, collegiate athletes experience greater severity of negative consequences due to substance use (Martens et al., 2006). This is not surprising given that athletes consume more and have more to lose than non-athletes, including scholarships and eligibility.

Despite the evident negative consequences of substance use, some athletes have reported positive effects. For example, commonly reported positive effects include relaxation,

socialization, increased energy, stress and pain relief, reduction of anxiety (Evans et al., 1992; Green et al., 2001; Martens et al., 2003).

Use of alcohol and illicit drugs influence referrals to campus counseling centers (see Glick & Horsfall, 2009). Thus, excessive use and substance-related negative consequences in athletes warrant comprehensive prevention and treatment. Most efficacious interventions for substance abuse include behavioral or cognitive therapies (Prendergast, Podus, Finney, Greenwell, & Roll, 2006; Rounsaville, Carroll, & Back, 2004). These therapies can help establish alternative stress coping behaviors and develop effective self-control skills. Although these therapies typically aim for abstinence from substances, interventions that target reduction in use and prevention of abuse might be more feasible (Sanchez-Craig, 1980; Sobell & Sobell, 1973, 1976). Therefore, therapeutic programs for student-athletes should emphasize development of coping and self-control skills relevant to reduction and prevention of substance abuse.

Goal-setting and motivation. Goal-setting is an integral part of the athletic culture, which offers numerous benefits to performance (Weinberg & Butt, 2014; Williams & Krane, 1998). For example, goals tend to increase athletes' perseverance and focus their attention on elements of performance that could otherwise be overlooked (Larsen & Engell, 2013). Goal-setting may be conceptualized as a motivational technique that leads to high performance in sports (Kyllo & Landers, 1995; Larsen & Engell, 2013). In turn, athletes' motivation to reach optimal performance can significantly affect their approach to training and competition, which may determine their level of perseverance in accomplishing long-term goals (Weinberg & Gould, 2014b). In addition, goals-setting skills can be generalized to other areas of the athlete's life, such as school, managing stressors, career plans, and interpersonal relationships.

A number of strategies and interventions have been identified to assist goal-setting. Many researchers have attempted to formulate goal-setting for optimal sport performance, concluding that goals should be specific, measurable, and realistic (Locke & Latham, 1985). It is recommended that athletes develop their personal goals collaboratively with their coaches (Maitland & Gervis, 2010) because coaches are extremely influential to athletes (Johnson et al., 2011). Goal accomplishment can be facilitated by supportive others through reward systems that are commensurate with the number of achieved goals (Donohue et al., 2013). Motivation to accomplish performance goals may be improved through positive self-talk (Hardy, Gammage, & Hall, 2001; Kirschenbaum & Bale, 1980; Weinberg, Smith, Jackson, & Gould, 1984), motivational enhancement interventions (Donohue, Barnhart, Covassin, Carpin, & Corb, 2001; Miller & Donohue, 2003; Miller & Rollnick, 2013), and cognitive and behavioral skill-based interventions (Mattie & Munroe-Chandler, 2012).

Arousal and anxiety. Anxiety is among the most crucial factors in the context of performance (Martin & Pear, 2011). For instance, competitive state anxiety, also commonly referred to as performance anxiety, affects many athletes before and after competitions (Martens et al., 1995; Weinberg, & Genuchi, 1980). Evidence suggests that more than 50 percent of Olympic level athletes have sought consultation related to anxiety (Murphy, 1988). Similarly, anxiety-inducing fears about injury have been identified as a performance-interfering factor (Crossman, 1997; Walker & Nordin-Bates, 2010). Nevertheless, an optimal level of anxiety is important for performance because under-arousal can decrease motivation and focus, and over-arousal can result in tension and negative thoughts (Balague, 2005).

Several theories that illustrate the anxiety-performance relationship have been proposed. For example, the widely accepted Yerkes-Dodson theory describes an inverted U-shaped

relationship between anxiety and performance, suggesting moderate levels of performance anxiety facilitate performance, while excessively low or high levels of anxiety can undermine it (Yerkes & Dodson, 1908). Another theory of anxiety-performance relationship, called the model of Individual Zones of Optimal Functioning (IZOF; Hanin, 1997, 2000), questions the basic assumptions of the inverted-U theory by emphasizing individual differences. The IZOF model postulates that each individual has a preferred level of anxiety that is associated with their optimum performance; some people tend to succeed when anxiety is low while others tend to succeed when anxiety is high. The last theory of anxiety-performance relationship focuses less on the amount of anxiety; instead, its central concern is the cognitive appraisal of anxiety. For example, Otten (2009) suggested positive appraisal of anxiety may lead to greater perception of control over one's sport and greater sport confidence, which in turn translates into better performance under pressure, while negative appraisal of anxiety may lead to the opposite.

Several researchers have emphasized that professionals should assist athletes in entering their zones of optimal functioning through cognitive and behavioral strategies (Cox, 2002; Robazza, Pellizzari, & Hanin, 2004; Taylor & Wilson, 2002; Weinberg & Gould, 2014a). Therefore, to achieve optimal performance, interventions involving cognitive and behavioral skills training specific to anxiety and arousal control or excitation in sports as well as other life domains (e.g., academics, social) are recommended (Gould & Udry, 1994; Robazza et al., 2004). Such interventions might involve cognitive restructuring of negative thoughts to be more neutral or with a positive bend (i.e., identifying maladaptive thoughts and teaching realistic, coping-focused thinking), relaxation skills training (e.g., diaphragmatic breathing, progressive muscle relaxation, visualization; Gould & Udry, 1994; Martin & Thomson, 2011), yoga, motivational and focus statements (Donohue, Miller, et al., 2006), and music (Miller & Donohue, 2003).

Evidently, the strong relationship between performance and anxiety underscores the importance of establishing culturally informed mental health programs for athletes.

Self-talk and mental preparation. Athlete self-talk and mental preparation techniques are critically important factors in both competitive and training performance (Hatzigeorgiadis, Zourbanos, Galanis, & Theodorakis, 2011). Gould, Flett, and Bean (2009) defined mental preparation as “cognitive, emotional, and behavioral strategies athletes and teams use to arrive at an ideal performance state or condition that is related to optimal psychological states and peak performance for either competition or practice” (p. 53). Numerous research accounts indicate that more successful athletes utilize mental preparation techniques to a greater extent than their less successful counterparts (Gould et al., 2009). For instance, in one study, 99 percent of Canadian Olympic athletes reported that they utilized mental rehearsal to enhance their performance (Orlick & Partington, 1988). Several other studies reported that implementation of imagery techniques as part of mental preparation improved athletic performance (Vealey & Greenleaf, 2010). Self-statements may assist in performance preparation and evaluations of performance, including interpretation of feedback from others (Hardy, Gammage, et al., 2001). Self-talk and various other mental preparation techniques have strong links to self-confidence, motivation, and anxiety control (Gould, Hodge, Peterson, & Giannini, 1989; Hardy, Gammage, et al., 2001; Van Raalte, Brewer, Rivera, & Petitpas, 1994) and can help athletes control their mood, stop negative thoughts, correct bad habits, and improve focus, planning, problem-solving ability, and skill acquisition (Zinsser, Bunker, & Williams, 2006; Williams & Leffingwell, 2002).

Self-talk can be negative (e.g., “I can never get this right”), neutral (e.g., “I am going to race today”), or positive (e.g., “I am prepared for this race”) (Gammage, Hardy, & Hall, 2001).

Negative self-talk may include self-criticisms, pressure-inducing statements (e.g., “I have to,” “I should”), and comparisons to others; these negative statements can significantly undermine mental preparation, evaluation of self, and the performance itself (Hewitt, 2009). Neutral self-talk is neither positive nor negative; it is less pressure inducing and can be helpful when positive thinking is not feasible or realistic (Gammage et al., 2001). By contrast, positive and constructive self-talk, which may include self-affirmations and motivational statements, can produce a positive attitude, optimum mental readiness, and successful performance (Donohue et al., 2015; Donohue, Miller, et al., 2006). For example, Hardy, Hall, and Alexander (2001) illustrated that positively-framed self-talk can increase motivation and prevent negative affect, such as depression (Seligman, Schulman, DeRubeis, & Hollon, 1999). This relationship is particularly relevant to collegiate athletes, because feelings of depression are significantly influenced by stress, which student-athletes experience at high levels (Yang et al., 2007). Furthermore, self-talk can be generalized to optimize other areas of life that impact sport performance (Donohue, Dickens, & Del Vecchio, 2011), including academics (e.g., anxiety before an exam), relationships (e.g., asking someone for a date), and mental health (e.g., self-depreciating thoughts).

Self-talk training, as part of cognitive-behavioral interventions, can be helpful in improving performance in both sport and life contexts. The concept of self-talk represents one of the fundamental tools of cognitive-behavioral therapies (Meichenbaum, 1977; Wright et al., 2006). These therapies aim to change individuals’ thoughts, interpretations, and behaviors to optimize daily functioning. In sports, negative or unproductive self-talk, like most habits, can be modified with an analysis of past behaviors in practices and competition, repeated practice of positive and constructive self-statements, and imagery of tasks in which self-talk is utilized

(Hardy, Gammage, et al., 2001; Hardy et al., 1996). Additionally, negative self-talk can be prevented through the utilization of thought stopping and imagery strategies (Gould et al., 2009). In their meta-analytic review, Hatzigeorgiadis and colleagues (2011) concluded that interventions involving self-talk training were more effective at enhancing performance than interventions not involving self-talk training. Thus, performance-based programs that incorporate optimization of self-talk into curriculum may provide effective training for athletes, teaching them to establish optimum mindsets throughout practice and competition.

Confidence. Athlete confidence is critical for successful performance (Hays, Thomas, Maynard, & Bawden, 2009). Confidence has been identified as the most consistent factor differentiating successful athletes from less successful ones (Gould, Weiss, & Weinberg, 1981; Weinberg & Gould, 2014c; Zinsser et al., 2006) and one of the strongest predictors of *clutch* performance (i.e., performing better under pressure; Otten, 2009). Several studies found that international-level athletes and Olympic champions and their coaches reported confidence as the most critical mental skill (Vealey, 2009), and one study found that more than 80 percent of elite golfers reported a high level of self-confidence during successful performance (Cohn, 1991). Numerous literature accounts suggest that student-athletes who are more confident in themselves and their abilities are able to think positively even when negative thoughts or problems occur, and tend to focus on solutions to problems rather than problems (Grove & Heard, 1997; Hatzigeorgiadis, Zourbanos, Mpoumpaki, & Theodorakis, 2009; Jackson, Thomas, Marsh, & Smethurst, 2010; Psychountaki & Zervas, 2000). On the other hand, these studies found that student-athletes with low confidence tend to self-doubt and self-criticize more, adopt more inadequate decision-making styles, dwell on the problems and their inability to find solutions, and are unable to think positively once negative thoughts or problems have occurred.

Elite athletes have reported being in need of development and maintenance of self-confidence through mental skills training (Vealey, 2009). Confidence can be facilitated through cognitive-behavioral interventions that employ the use of mental skills training, such as mental rehearsal, imagery, self-talk, and goal-setting (Boyd & Zenong, 1999; Cohn, 1990). Martin and Thomson (2011) reported several cognitive and behavioral strategies that were shown to improve confidence and performance, including focusing on realistic process-oriented goals (as opposed to worrying about the outcome) and preparing and following specific performance plans. When setting goals, coaches or professionals should assure that an athlete is capable of achieving the goals set forth because unaccomplished performance goals can negatively impact confidence (i.e., confidence-performance spirals; Lindsley, Brass, & Thomas, 1995). Cognitive-behavioral interventions reviewed above might be particularly effective when they are taught through modeling, role-playing, and behavioral rehearsal (Donohue et al., 2013) and incorporated into pre-performance routines (Donohue et al., 2003; Donohue, Miller, et al., 2006; Vealey, 2009). Lastly, it is worth mentioning that a strong link between athlete and coach confidence exists (Feltz, Short, & Sullivan, 2008), suggesting coaches who “believe” in their athletes should be involved in the intervention programs to help facilitate athlete confidence.

Underutilization of Mental Health Services

There is an unidentified number of circumstances that may lead to changes in performance. Most of the reviewed factors are interrelated and influence multiple aspects of an athlete’s life at any given time. Therefore, to assist athletes in effectively balancing life demands and managing stressors, interventions that offer a variety of mental and behavioral skills are recommended. Many aspects of performance can be enhanced through skill-based interventions that optimize the way athletes think, behave, and thus perform. Given that athletic performance

can be influenced by factors outside of sports (e.g., grades, intimate relationship; Broughton & Neyer, 2001; Gould et al., 1993; Gould, Jackson, et al., 1993a, 1993b), it is important to generalize skills to enhance other aspects of life. For example, communication skills can optimize relationships with significant others, prevent misunderstandings with non-athlete friends, and increase an athlete's assertiveness in academic domains (Donohue et al., 2013). Likewise, mental skills can enhance motivation, improve focus, mental toughness, optimism, and self-esteem in various aspects of an athlete's life (Fournier, Calmels, Durand-Bush, & Salmela, 2011; Sheard & Golby, 2006).

Despite the potential benefits of skill-based interventions (Donohue et al., 2015; Moore, 2009), the nature of the athletic culture may prevent athletes from seeking appropriate care (Etzel & Watson, 2007; Ferrante et al., 1996; Watson, 2005). Although student-athletes may be referred for services if their mental health conditions become pathological, they are unlikely to pursue counseling and mental health services (López & Levy, 2013; Pinkerton, Hinz, & Barrow, 1989; Van Rensburg et al., 2011; Watson, 2005, 2006). Conformity to sport norms of toughness and resiliency seem to intensify underutilization of mental health services in athletes (Watson, 2005). For example, the sport culture perpetuates ideas of self-reliance, injury as weakness, and a win at all costs mentality that make treatment difficult to implement and permit mental health problems to develop further (Etzel & Watson, 2007; Ferrante et al., 1996).

When athletes do seek treatment, problems may arise when professionals at university counseling centers are not familiar with the culture of sports or specialized needs of athletes (Brooks, Etzel, & Ostrow, 1987; López & Levy, 2013). Although cultural sensitivity is regularly addressed within counseling services (Baker, 1990), the same cultural sensitivity principles are rarely incorporated into treatment planning within the athlete population (Cooper, 2006;

Donohue et al., 2013). Due to unique stressors and sport norms of athletics, interventions should be uniquely tailored to the athlete population (Etzel, 2006). These cultural considerations are important because athletes may be more motivated to seek services for performance optimization than services for a pathological problem due to embarrassment, guilt, and so on.

Need to Develop Non-Pathological Approaches to Mental Health Care in Athletes

One of the chief goals of scientists who develop psychologically based intervention programs is to reduce stigma associated with the pursuit of psychological intervention (Gelso & Woodhouse, 2003; Masuda et al., 2007), and to develop adjunctive interventions that are not impairment-driven (e.g., Scheel, Davis, & Henderson, 2012; Wong, 2006). Unfortunately, current practice perpetuates stigma associated with mental health service utilization. A salient example is the need to evidence clinically significant impairment in functioning in order to receive financial support for treatment of psychological conditions. Indeed, most insurance companies require a mental health diagnosis that is consistent with the Diagnostic and Statistical Manual (DSM; American Psychiatric Association, 2013) or International Classification of Diseases (ICD; World Health Organization, 1993). Along these lines, as many as 70 percent of primary care visits involve behavioral health needs (Fries, Koop, & Beadle, 1993); unfortunately, most health insurance companies will not pay for behavioral treatment services for persons who do not evidence the requisite diagnostic threshold (Clinical Utilization, 2011; Medical Review, 2015; Sabin, & Daniels, 1994).

Soon after the National Institute of Mental Health (NIMH) was established in 1947, researchers discovered that they could obtain funding easier if their research involved pathology (Seligman & Csikszentmihalyi, 2000). Since then, empirical research has primarily focused on psychological disorders, problems, and various hardships that humans encounter, such as

addictions, anxiety, and divorce (American Psychological Association, APA, 2015). For instance, on August 18, 2015 the NIMH website indicated that out of 100 research funding opportunities, only 17 of them focused on prevention of problems (see NIMH Prevention, 2015; Notices and Announcements, 2015), and none of these studies focused on wellness.

Researchers have argued that during the past half century, psychology has become too negative and focused exclusively on mental illness (Seligman & Csikszentmihalyi, 2000). Formalized assessment models are also biased to determine the presence of impairments or problems. For instance, standardized assessment instruments such as the Beck Depression Inventory-II (BDI-II) and the Symptom Checklist 90-Revised (SCL90-R) focus solely on negative symptoms an individual may present (Beck, Steer & Brown, 1996; Derogatis, 1994). Similarly, in the sports domain, the Sport Interference Checklist (SIC) was designed to assess specific cognitive and behavioral problems that interfere with sport performance in both training and competition domains (Donohue, Silver, et al., 2007). Of course, these measures do not permit assessment of behaviors, thoughts, and feelings on the positive spectrum of optimization.

Although assessing areas of functioning in terms of severity of impairment may be beneficial for treatment planning, exclusive focus on deficits and problems perpetuates the stigma associated with mental health and overlooks the positive aspects of functioning (Seligman & Csikszentmihalyi, 2000). Instead, cognitive and behavioral problems could be conceptualized on a continuum, deemphasizing the pathological side of this continuum and emphasizing optimization of exemplary areas of performance (Donohue et al., 2013; Seligman & Csikszentmihalyi, 2000; Sheldon & King, 2001). Although support for implementation of prevention and strength-based mental health services remains low when compared to treatment services that are pathology-based, some approaches have attempted to address this gap.

Preventative approach. A wellness or preventative approach to psychological conditions is independent of impairment or pathology. Rather, this approach is based on preventing potential impairments from happening. Awareness of mental health promotion and prevention programs has increased over the recent years, and many preventative programs have been established (Jané-Llopis, 2005). Such programs are important because they address mental health before pathological problems develop and they have been shown to ameliorate symptoms and reduce risk factors for psychological disorders and behavioral problems (Clarke et al., 2001; Jane-Llopis, Hosman, Jenkins, & Anderson, 2003; Mrazek & Haggerty, 1994; Nowak & Heinrichs, 2008; O'Connell, Boat, & Warner, 2009; Reavley & Jorm, 2010; Stice & Shaw, 2004).

Furthermore, implementation of preventative programs is more cost-beneficial than implementation of interventions after problems have escalated. The cost-benefit ratio for prevention and early treatment programs range from 1:2 to 1:36 (i.e., a \$1 investment yields \$2-36 saving in cost that would have been spent on treatment and associated expenses; Miller & Hendrie, 2008; O'Connell et al., 2009; Swisher, Scherer, & Yin, 2004). Such programs help reduce the cost of mental health and substance use in the United States, which was estimated at \$317.6 billion for serious mental illness (Hogan, 2008) and more than \$600 billion for substance use each year (Prevention of Substance Abuse, 2014). It was estimated that implementation of effective nationwide school-based substance abuse prevention programs could have reduced the cost of youth substance abuse by up to \$197.2 billion in 2002, with a cost-benefit ratio of 1:7.4 to 1:36 (Miller & Hendrie, 2008). For example, a preventative Drug-Free Communities (DFC) Support Program, supported by the Substance Abuse and Mental Health Services Administration

(SAMHSA), resulted in a significant decline in substance use among youth nationwide following the implementation of the program (Drug-Free Communities, 2013).

Prevention programs are also cost-effective compared to care as usual. For example, a randomized controlled trial conducted to prevent depressive episodes in at-risk adolescents demonstrated that a group, brief cognitive prevention program was five times more effective than care as usual (i.e., non-study mental health services and antidepressants as desired by participants) in reducing the incidents of major depressive episodes (Clarke et al., 2001). A subsequent cost-effectiveness analysis found that this program was cost-effective compared to similar interventions (Lynch et al., 2005).

Administrators of colleges and universities have also offered psycho-educational and skill-based prevention programs targeting mental health issues. Numerous studies have examined the effectiveness of such preventative programs in the college population. In their meta-analytic review of 83 controlled preventative studies for college students, Conley, Durlak, and Dickson (2013) concluded that skill-oriented prevention programs, particularly mindfulness and cognitive-behavioral therapies, were the most effective interventions as compared to all other types of programs. Furthermore, prevention programs for students that involve interactive components and supervised skill-acquisition have shown larger effects. In contrast, psycho-educational, low-dosage programs (e.g., single session, less intensive) have shown the lowest effects in improving students' mental health and adjustments (Conley et al, 2013; Rooney & Murray, 1996; Stice & Shaw, 2004). This is consistent with previous findings, suggesting psycho-educational content is ineffective in producing behavioral change (Clarke, Hawkins, Murphy, & Sheeber, 1993; Larimer & Cronce, 2002).

The NCAA and local intercollegiate athletic programs have contributed to the preventative movement by creating student-athlete services for mental and behavioral health, such as Student Services for Athletes (SSA; Jordan & Denson, 1990) and Athletes Connected (Eisenberg, 2015). Student Services for Athletes offers holistic support services, including help in balancing athletic and academic roles, transitioning into college, facilitating community outreach, and providing counseling. This program has been reported to be positively accepted by athletes, and although evaluations of this program have not examined the prevention of mental health, the program has demonstrated promising outcomes in the aforementioned areas, as well as a consistent annual increase in recruitment of students-athletes, coaches, and staff members (Jordan & Denson, 1990). The program authors attributed the success of SSA to the cultivation of positive working relationships with the coaches, athletic administrators, and support staff, which is consistent with previous literature (Hipple, Hay, & Young, 1988; Martens et al., 2006). Athletes Connected is a collaborative prevention and outreach program, supported by the NCAA Innovation in Research Grant, aimed at increasing awareness of mental health issues, reducing stigma, and promoting coping skills among collegiate athletes. The Athletes Connected final report revealed that student-athletes reported improved mood and increased skill use, comfort level and knowledge in discussing mental health concerns, and help-seeking behaviors at post-intervention (Eisenberg, 2015).

To address substance abuse in student-athletes, the NCAA created and supported the CHOICES programs (Anderson et al., 2009). The CHOICES grants have provided 40 individual NCAA-member campuses nationwide with funding to implement and evaluate substance abuse prevention programs that utilize a variety of implementation strategies, including outreach and education efforts, social norms marketing, alcohol-free social events, and peer education. The

NCAA CHOICES Evaluation of Grants final report (2004) indicated that, overall, participating student-athletes reported increased awareness of high risk drinking and the negative consequences of alcohol use, changed their own drinking behaviors, and felt more responsible (Anderson & Rajnik, 2004). Program results should be interpreted with caution, as these programs have yet to be examined utilizing randomized controlled trial methodology.

Although some participating institutions reported no noticeable changes in student-athlete behaviors, likely due to underutilization of services offered through these programs, others were more successful. For example, one study showed that, compared to the control group, a single-session of preventative alcohol intervention with athlete-specific individualized feedback resulted in significant reductions in alcohol use and negative consequences, and increase in protective behavioral strategies (Cimini et al., 2015). This program utilized motivational interviewing and cognitive-behavioral techniques adopted from a standardized harm-reduction prevention program for college students (i.e., BASICS; Dimeff, Baer, Kivlahan, & Marlatt, 1999; Marlatt, Baer, & Larimer, 1995). Furthermore, the success of this program might be partially attributed to the provision of athlete-specific customized feedback, suggesting programs that incorporate athletic culture may be more effective.

To assist athletes in managing the demands of their daily life, many other prevention programs exist within the university athletic departments nationwide. In addition to the academic, mental health, and substance abuse services, such programs have traditionally provided career counseling, violence prevention, and various wellness initiatives.

Although there are numerous benefits of prevention programs, particularly when they are skill-based, most of them are not comprehensive and offer limited dosage of services compared with psychological interventions (Conley et al, 2013). Some preventatively oriented programs,

however, provide segue into more comprehensive models of intervention by increasing the dosage of services (e.g., more intensive, more sessions) as problem severity increases. One salient example outside of sports is The Triple P – Positive Parenting Program (Prinz, Sanders, Shapiro, Whitaker, & Lutzker, 2009; Sanders, 1999; Sanders et al., 2004), which is an evidence-based program that provides parents with simple and practical strategies to help parents confidently manage the behavior of their children. Triple P offers five levels of intensity depending on the severity of behavioral, developmental, and emotional problems in children, from prevention (i.e., levels 1-3) to intensive intervention (i.e., levels 4-5; Sanders & Prinz, 2005). Meta-analytic reviews revealed that better outcomes were associated with more intensive formats (e.g., levels 4 and 5, up to 15 sessions; Nowak & Heinrichs, 2008; Sanders, Kirby, Tellegen, & Day, 2014), suggesting preventative formats that are less comprehensive produce poorer outcomes compared with intensive interventions. Indeed, preventatively oriented Triple P levels 1 to 3 provide only zero to four sessions, with level 1 offering no professional face-to-face contact (Triple P, 2008), and show lower effect sizes compared with the more intensive levels (Nowak & Heinrichs, 2008). Thus, to achieve better outcomes with more severely affected children, it is important to increase the intervention dosage. Therefore, as problem severity increases Triple P becomes more intervention-focused rather than prevention-focused.

There is evidence to suggest that prevention efforts are often unsuccessful (Anderson & Rajnik, 2004; Gregory, 2001; Marcello, Danish, & Stolberg, 1989; Martens et al., 2006; Thombs & Hamilton, 2002). It is possible that many psychologically-based prevention programs are psychoeducational in nature and also offer insufficient intervention dosages (Anderson & Rajnik, 2004; Conley et al., 2013; Rooney & Murray, 1996; Stice & Shaw, 2004). These findings are consistent with previous literature, suggesting programs that offer psychoeducational content and

low dosage of services (e.g., fewer sessions, didactic instruction instead of behavioral rehearsal) are relatively ineffective in producing behavioral change than those offering higher dosage (Clarke et al., 1993; Conley et al., 2013; Jane-Llopis et al., 2003; Larimer & Crouse, 2002; Rooney & Murray, 1996; Stice & Shaw, 2004; Thombs & Hamilton, 2002).

While prevention programs are, by definition, intended to focus on preventing future impairment, they typically do not target the optimization of performance. Thus, optimization models for mental health that comprehensively target multiple areas of life regardless of the extent of problem severity may be a viable alternative to prevention programs, and providers of these programs aim to manage both ends of the spectrum of mental health (i.e., not optimum at all, completely optimum). Optimization models focus on strengths, and may be designed to have a relatively high dosage of meetings that permit personal goals to be fully developed through skill development. Seligman (2002b) noted that there is a set of buffers, such as positive human traits and strengths, that we can build on to prevent psychopathology. He stated that “by identifying, amplifying, and concentrating on these strengths in people at risk, we will do effective prevention” (the Nikki principle; p. 5). Along these lines, it is strongly recommended that researchers develop and evaluate interventions that build on individuals’ strengths, and not just attempt to prevent impairment (Seligman & Csikszentmihalyi, 2000).

In order to achieve optimum performance, interventions for student-athletes should be culture-sensitive, skill-oriented, and comprehensive, offering high dosage of services and span the continuum of optimization (from problems to strengths in multiple aspects of life). Additionally, intervention modality should include motivational interviewing and cognitive-behavioral components. Furthermore, program staff should establish positive working

relationships with coaches, athletic administrators, and support staff to assist goal development that is focused on the optimization of skill development regardless of skill level.

Positive psychology. A non-pathological approach to psychology that has gained momentum during the past decade or so is positive psychology. This approach targets well-being, and can be defined as the study of human strengths and virtues that aid individuals in the achievement of life satisfaction (Seligman & Csikszentmihalyi, 2000). The central beliefs of positive psychology are that humans want to lead meaningful and fulfilling lives, foster what is best within themselves, and enhance various life experiences (Duckworth, Steen, & Seligman, 2005; Seligman, 2002a; Seligman & Csikszentmihalyi, 2000). Seligman described three main components underlying the study of positive psychology: positive emotions (i.e., contentment with the past, happiness in the present, and hope for the future), positive individual traits (i.e., strengths and virtues, such as the capacity for love and work, courage, compassion, resilience, creativity, curiosity, integrity, self-knowledge, moderation, self-control, and wisdom), and positive institutions (i.e., fostering of qualities that better communities of people, such as justice, responsibility, civility, parenting, nurturance, work ethic, leadership, teamwork, purpose, and tolerance).

Positive psychology researchers aspire to catalyze change in contemporary psychology from the exclusive focus on fixing impairments and deficits to also cultivating positive qualities. For instance, Peterson (2009) argued that preoccupation with disorder limits our ability to fully understand a person's condition. Seligman and Csikszentmihalyi (2000) passionately remind us that the field of psychology "is not just the study of pathology, weakness, and damage; it is also the study of strength and virtue. Treatment is not just fixing what is broken; it is nurturing what

is best” (p. 7). Furthermore, strengths and optimism might function as protective factors against mental health problems (Masten, 2001; Taylor, Kemeny, Reed, Bower, & Gruenwald, 2000).

Consistent with this view, a dynamic construct of resilience, related to mental health and positive psychology, emerged. Resilience is “the process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress” (i.e., family and relationship problems, serious health problems, or workplace and financial stressors; Comas-Diaz et al., 2015, para. 2). The scope of resilience has expanded beyond difficult life situations to encompass positive competence and adaptive behavior in general (Shastri, 2013). Resilience has been found to serve as a protective factor in the development of depression (Min, Yu, Lee, & Chae, 2013), and it can be learned through skill-acquisition (as opposed to being an innate character trait; Shastri, 2013). Thus, researchers have attempted to establish intervention programs to foster various aspects of resilience to prevent depression.

One such program is the Penn Resiliency Program (PRP; Gillham, Brunwasser, & Freres, 2008), which is a preventative positive psychology intervention (PPI) aimed at promoting resilience and combating depressive and anxiety symptoms in adolescents and college students. Penn Resiliency Program is designed to reduce depressive and anxiety symptoms, and increase active coping and optimistic explanatory style (Brunwasser, Gillham, Kim, 2009; Gillham et al., 2012) through the implementation of classroom-based cognitive-behavioral strategies (e.g., cognitive restructuring of negative thoughts, emotion regulation, problem-solving, relaxation, and assertiveness training).

A meta-analytic review of 17 controlled PRP studies revealed that overall the interventions significantly reduced depressive symptoms (Brunwasser et al., 2009). Some PRP studies, however, demonstrated small effect sizes and did not maintain treatment gains at follow-

up (e.g., Gillham et al., 2008). The overall small effect sizes found in PRP studies may be attributed to overutilization of the cognitive components of cognitive behavioral therapy (CBT; e.g., cognitive style, coping) as compared with behavioral skills (Brunwasser et al., 2009). Consistent with this view, investigators of depression treatment studies indicate that primarily behavioral, not cognitive, components of CBT produce treatment gains (Jacobson et al., 1996). This finding suggests cognitive-behavioral interventions should emphasize behavioral skills to enhance mood outcomes.

Other PPIs utilize different methods aimed at cultivating positive feelings, behaviors, or cognitions, enhancing well-being, and ameliorating depressive symptoms (Boiler et al., 2013; Seligman, Radish, & Parks, 2006; Sin & Lyubomirsky, 2009). Such methods include writing about positive experiences, expressing optimism or gratitude, positive future thinking, reflecting on personal strengths, and self-compassion. These PPIs have ranged in the delivery format, from brief preventative programs to comprehensive interventions (Bolier et al., 2013; Sin & Lyubomirsky, 2009). The authors note, however, that these PPIs are not aimed at addressing existing pathology in individuals; instead they focus on building strengths (Sin & Lyubomirsky, 2009).

Two meta-analytic reviews have been conducted to date evaluating the effectiveness of PPIs. The most recent meta-analysis of 39 randomized controlled PPI effectiveness studies, excluding those borrowed from cognitive therapy (e.g., PRP), revealed that PPIs significantly enhance subjective and psychological well-being and, in some cases, reduce symptoms of depression, although the effects were determined to be small (Bolier et al., 2013). Consistent with previous literature, larger effects were found in higher dosage interventions (e.g., more sessions) and in individual interventions compared with group or self-help formats (Conley et al.,

2013; Sin & Lyubomirsky, 2009). Unfortunately, most interventions (26 out of 39 studies) were delivered in a self-help format, limiting face-to-face interaction. The results of this meta-analysis were generally supportive of the findings in the previous meta-analytic review of 51 PPI studies by Sin and Lyubomirsky (2009). However, effect sizes in this earlier meta-analysis were in the moderate range. Bolier and colleagues suggested that lower effect sizes in their meta-analysis may be attributable to stricter inclusion criteria than those used in Sin and Lyubomirsky, which included only randomized controlled trials and excluded mindfulness and life review therapy. The results of the initial meta-analysis additionally demonstrated that the effects of PPIs were moderated by participants' age, suggesting older adults might benefit from PPIs more than younger people. This finding suggests that PPIs as a sole intervention may be limited in the college-age population.

In addition to interventions, assessment instruments exist that can be used to measure non-pathological characteristics of humans in a manner consistent with the tenets of positive psychology. For instance, the Quality of Life Inventory (QOLI; Frisch, 1994), a brief positive psychology assessment of well-being and satisfaction with life, yields an overall score of quality of life, based on the 16 areas of life found to make up happiness or quality of life, such as love, work, and play. Measures like QOLI and other life satisfaction scales (e.g., Bradshaw, Donohue, Cross, Urgelles, & Allen, 2011; Diener, Emmons, Larsen, Griffin, 1985; Donohue, DeCato, Azrin, & Teichner, 2001; Fordyce, 1988; Lyubomirsky & Lepper, 1999; Ryff, 1989) can assist clinicians and researchers in identifying assets to counteract problems of living that contribute to pathology. For instance, Heisel and Flett (2004) found that life satisfaction significantly contributes to the variability in suicidal ideation beyond of what is accounted for by negative psychological factors. Similarly, youth who express high life satisfaction (Donohue et al., 2003;

Suldo & Huebner, 2004) and parent satisfaction (DeCato, Donohue, Azrin, & Teichner, 2001) are less likely to exhibit externalizing problems when confronted with stressful life events compared to youth who express low satisfaction.

Positive psychology appears to be a good alternative to the pathology-based models and it has some outcome support (e.g., Bolier et al., 2013; Brunwasser et al., 2009; Sin & Lyubomirsky, 2009). Positive psychology interventions can be effective in enhancing subjective and psychological well-being and may help reduce depressive symptoms. They may also be used as preventative, easily accessible, and stigma-reducing alternatives (Bolier et al., 2013). Although PPIs are helpful in promoting well-being and resilience, the results have been inconsistent and not as effective in the long term (Bolier et al., 2013; Brunwasser et al., 2009; Challen, Machin, & Gillham, 2014; Sin & Lyubomirsky, 2009). In fact, some studies have shown positive psychology outcomes to have low to moderate effect sizes while others have shown to be no more effective than control conditions (Bolier et al., 2013; Brunwasser et al., 2009; Challen et al., 2014; Froh, Sefick, & Emmons, 2008; Seligman et al., 1999; Sin & Lyubomirsky, 2009). For example, some studies found no effect on reductions in negative symptoms (e.g., depression, anxiety, and hopelessness) or increases in positive factors (e.g., happiness, life satisfaction, optimism, adaptive coping, and self-efficacy) compared to the control conditions and thus argued against implementing PRP as a wide-spread intervention until strong outcome support is established (Brunwasser et al., 2009; Gillham et al., 2008; Tak, Kleinjan, Lichtwarck-Aschoff, & Engels, 2014).

The results from the PPI literature demonstrate several limitations for its practical applicability as a sole treatment. Most PPIs have been conducted in a group or self-help format, potentially taking away from the therapy experience, reducing adherence, and increasing attrition

(e.g., Shapira & Mongrain, 2010). Further, positive psychology approach might not be convincingly definitive, involving constructs that are difficult to measure and thus improve (e.g., optimism, resilience). Lastly, most positive psychology interventions (excepting PRP interventions) involve promotion of well-being and positive states, but generally lack skill development (e.g., Seligman, Radish, & Parks, 2006; Seligman, Steen, Park, & Peterson, 2005). This deficit might be vital in determining the applicability of PPIs to student-athletes because skill-development is a fundamental aspect of the athletic culture (Donohue et al., 2013). However, as the authors suggest, PPIs can supplement traditional clinical interventions, perhaps by adding a positive bend to existing methods (Seligman et al., 2005).

Performance optimization. The proposed model of performance optimization can be characterized as a therapy model that involves preventive psychology and positive psychology, and also includes skill oriented components similar to those found in behavioral psychology (Miller, Zweben, & Johnson, 2005; Whelan, Mahoney, & Meyers, 1991). First, such therapy takes place before student-athletes' mental health reaches pathological levels (i.e., prevention) because athletes are less likely to seek psychological assistance for more severe problems due to social stigma and sport norms (Watson, 2005). Second, the performance optimization model aims to achieve a positive state of physical and psychological well-being beyond the absence of problems and psychopathology (i.e., positive psychology). Third, cognitive and behavioral skills are used as a tool to prevent stress and improve coping, thus creating a positive long-term impact on student-athletes' mental health and performance.

The performance optimization model is based on the tenets of CBT, which postulate that our thoughts significantly affect our emotions and behavior, and our behaviors influence the way we think and feel (see Figure 1; Wright et al., 2006). The conceptual model depicted in Figure 1

was adjusted to emphasize how thoughts, behaviors, and feelings reciprocally influence one another; and in turn these factors reciprocally influence performance (see Figure 2). For example, a critical comment from the coach might trigger negative thoughts (e.g., “I’m never going to be good enough”) and feelings (e.g., sadness, frustration), which then leads to behavioral withdrawal (e.g., missing practice) and, subsequently, reduced performance. Poor performance then confirms the athlete’s negative beliefs and reinforces the vicious cycle. Consistent with conceptualizations of traditional CBT, the performance optimization model emphasizes restructuring of thoughts and behaviors to influence emotions in a positive way (Wright et al., 2006). It is assumed that thoughts, behaviors, and emotions fluctuate on a dynamic basis. Thus, to bring about optimum performance, thoughts, behaviors, and emotions must be in homeostatic state.

Complementing this model, thoughts and behaviors are conceptualized to occur on an optimization scale with non-optimal and optimal endpoints (see Figure 3) rather than traditional models that emphasize a continuum of pathology (present/absent, severity level). In this intervention approach, cognitive and behavioral skills are targeted to assist performance optimization, holistically leading to positive feelings that are associated with mental health and the prevention of stress. Importantly, the person’s level of impairment is irrelevant in this model; the person can enter intervention at any point along the continuum. Along these lines, if the person seeks optimization services, there is no assumption that he or she is presenting with pathology or impairment, unlike in the traditional treatment models. The optimization intervention is delivered comprehensively, prioritizing areas that are not as optimal and moving them in the direction of optimization to the extent of the person’s unique capabilities.

The model of performance optimization can be used as a foundation for goal-oriented and strength-based programs for student-athletes. One salient example of a performance-based program that meets the characteristics of the performance optimization model is The Optimum Performance Program in Sports (TOPPS). The Optimum Performance Program in Sports was recently developed with support from the National Institutes of Health and includes many components derived from positive psychology, but it also views performance optimization as a main orientation that is rooted in skill development (Donohue et al., 2013). Members of TOPPS view mental health as “optimal regulation of thoughts, feelings/ emotions, and behaviors consistent with a positive outlook and state of well-being” (Donohue et al., 2015, p. 2). Consistent with this view, athletes who participate in TOPPS are taught to think objectively but with a positive bend about all aspects of life, including sports, the goal of which is to produce an automatic bias to think optimistically.

To enhance program effectiveness, several considerations have been incorporated into TOPPS based on recommendations from previous literature reviewed above. Unlike PPIs, TOPPS intervention is capable of targeting the entire span of the continuum, from treating existing psychopathology and problems to enhancing exemplary areas of functioning. Indeed, the individual’s strengths are emphasized and used to promote positive change in areas that are desired by the athlete to be optimized (e.g., goal-worthy areas). Furthermore, unlike most preventive interventions, TOPPS provides a high dosage of services (e.g., more sessions) regardless of problem severity and comprehensively targets multiple aspects of the student-athlete’s life. Clinicians implementing TOPPS actively incorporate athletic culture into the program and foster positive working relationships with student-athletes, coaches, athletic administrators, and support staff to facilitate athletes’ trust. Lastly, TOPPS integrates evidence-

based skill-oriented techniques rooted in cognitive and behavioral therapies, and recruits supportive others (SOs) from multiple relationship domains (i.e., coaches, teammates, family members, and peers) to facilitate athletes' goal attainment.

The Optimum Performance Program in Sports is built on the tenets of Family Behavior Therapy (FBT; Donohue & Allen, 2011; Donohue & Azrin, 2011), which primarily focuses on goal accomplishment through cognitive and behavioral skill acquisition. At the inception of TOPPS, the FBT intervention manual (Donohue & Allen, 2011) was adapted to concurrently address sport performance and mental health goals in athletes. Athlete-specific FBT is designed to integrate SOs, including coaches, teammates, family members, and peers, into treatment planning and goal achievement, and it has already shown to enhance outcomes in mental health, relationships, factors that interfere with sport performance, risk of HIV/sexually transmitted infections (STIs), and substance use in collegiate athletes (Chow et al., 2015; Donohue et al., 2015; Pitts et al., 2015). The intervention package includes innovative features, such as enlistment calls (Donohue et al., 1998) and periodic text messages to athletes to increase retention (e.g., intervention session reminders, statements of support), engagement interviews emphasizing sport and ethnic culture (Donohue, Strada, et al., 2006), positive nomenclature to replace stigmatizing terminology (e.g. performance programming instead of treatment, performance coaches instead of mental health counselors), presence of athletic paraphernalia and motivational posters in the offices, opportunities for in-situ intervention implementation (e.g., playing field; Donohue et al., 2013), and focus on the optimization of performance rather than remediation of pathology.

Family Behavior Therapy consists of 12 to 16 60 to 90 minute outpatient meetings that are scheduled to occur across a four-month period and includes several intervention components

that can be chosen by the athlete and SO(s) from a menu of options. In addition to the existing FBT interventions, several sport-specific interventions have been developed to accommodate the culture of athletics. Taken together, the intervention menu features Orientation, Cultural Enlightenment, Dynamic Goal and Rewards, Performance Planning, Goal Inspiration, Self-Control, Environmental Control, Communication Skills Training (Reciprocity Awareness and Positive Request), Job Getting Skills Training, Financial Management Skills Training, Career Development, Performance Timeline, Pre-Performance Mindset Training, and Post-Performance Mindset Training (see Appendix for details; Donohue et al., 2015). Performance coaches (PCs) implementing FBT provide introductory rationale for each intervention, descriptive instructions and materials (e.g., handouts, worksheets) during intervention implementation, and homework assignments to practice skills prior to future sessions. To facilitate skill acquisition, behavioral strategies are utilized, including modeling, behavioral rehearsal, role-playing, and imagery. Therapeutic style and overarching procedures of FBT can be reviewed in the existing treatment manuals (see Donohue & Allen, 2011; Donohue & Azrin, 2011).

CHAPTER 2

PURPOSE OF THE PRESENT STUDY

Results of meta-analyses involving psychological interventions, primarily cognitive-behavioral, have demonstrated enhanced athletic performance consequent to intervention implementation (Meyers, Whelan, & Murphy, 1996; Weinberg & Comar, 1994). These studies suggest that effective evidence-based psychological interventions that may be used for athletic performance enhancement are available. Unfortunately, there has been a deficit in the evaluation of behavioral intervention programs to address mental health in athletes. Indeed, TOPPS is the only intervention approach that has been found to concurrently show improvements in both mental health/substance abuse and sport performance in clinical trials involving athletes who have been formally diagnosed with a mental health disorder (i.e., Chow et al., 2015; Donohue et al., 2015; Pitts et al., 2015). Previously, investigators of one study of TOPPS employed a multiple baseline design methodology to demonstrate that TOPPS was capable of improving substance use, unsafe sexual practices, mental health, sport performance, and relationships with teammates in a woman who evidenced substance abuse (Chow et al., 2015). Another case study involved a more flexible design, permitting an athlete in a combative sport to guide intervention planning to best fit his needs, resulting in significant gains in mental health and reductions in substance use (Pitts et al., 2015). Participants in both of these case studies were required to demonstrate clinically significant impairment (i.e., DSM diagnosis) to qualify for services at TOPPS. The current case examination was performed as an extension of the aforementioned optimization model to an athlete with no assessed mental health diagnosis. The current study will not be limited by manipulation of the independent variable (treatment implemented) as in Chow et al. (2015) and, unlike these previous case studies, will not require the participant to evidence

any degree of impairment. Instead, this study will focus on optimization of functioning in mental health, sport performance, and relationships. While the impairment-driven models attempt to intervene after pathological problems develop, the optimization model is capable of addressing mental health prior to impairment. Thus, this study will employ the previously mentioned performance optimization approach, in contrast to the traditional impairment-driven approaches, to evaluate the effect of TOPPS in an athlete who did not evidence significant pathology and instead desired optimization in the aforementioned areas. The following hypotheses will be investigated in this study:

- H1) The athlete will demonstrate notable improvements in mental health, sport performance, and relationships with coaches, teammates, family members, and peers at post-intervention and two follow-ups, as judged by an improvement of more than 30 percent on standardized assessments of these factors, or 0.5 standard deviation on standardized assessments for which *T*-scores are available.
- H2) The interventions will be implemented with high integrity, demonstrating 80 percent and above adherence to intervention protocols.

CHAPTER 3

CASE STUDY

Case Introduction

Maria presented to TOPPS as a collegiate female athlete in early 20s from a team sport at a Division I university. She was self-referred to TOPPS after participating in a team performance workshop, relevant to this program. The workshop introduced several sport-specific mental skills interventions and was aimed at increasing awareness of services offered by TOPPS. At the time of the referral, Maria lived with her parents and sister and was a full time student with partial athletic scholarship and part-time employment.

Maria was screened for inclusion and exclusion criteria to assure that she (a) was at least 18 years of age, (b) was a student-athlete as indicated by formal participation in the NCAA or Club sports for at least 4 months prior to referral, (c) was expected to be enrolled at a state university for the next 8 months, with no plans of an extended absence of more than 1 month within the first 4 months of participation in the study (to assure a 4-month baseline, opportunity for sufficient dosage of intervention implementation, and improvement of follow-up data recovery), (d) had no evidence of a psychiatric disorder as per pre-intervention DSM–IV results, (e) was not receiving any formal psychotherapy at the time of pre-intervention assessment to avoid confounds due to concurrent intervention, (f) had at least one adult supportive other (SO) willing to participate in the program. All study procedures were approved by the university's institutional review board for the protection of human participants.

Presenting Complaints

Maria reported experiencing negative thoughts and lack of self-confidence that interfered with her athletic performance. She additionally described fear of injury that prevented her from

performing to her full potential. These factors, along with difficulties with managing motivation, led Maria to consider abandoning her collegiate sport activities several months prior to seeking intervention services. Maria was interested in optimizing her confidence, motivation, and relationships with teammates and coaches.

History

Maria initiated her primary sport at age 3 when her mother introduced it to her. Maria's family, including her mother, grandmother, and sister, all participated in this sport during their respective times. During the formative years, Maria participated in a different sport, but returned back to her primary sport soon thereafter. Maria experienced several sport-related injuries during high school, including a dislocated elbow and knee problems, and she reported that these injuries have been occasionally troubling her ever since.

Maria was successful in her sport during high school. However, during her first year or so of college, she did not live up to her own sport-specific expectations and decided to quit because she thought her efforts were "a waste of time." She described feeling that she was "kind of there, not doing anything," and she did not want to "let her coach down" because she believed her coach "thought so highly of [her]." When Maria informed her coach about quitting, the coach stated that she saw potential in Maria and encouraged her to continue.

Just prior to joining TOPPS, Maria stated that she did not see herself the way other people saw her and thought that she "wasn't good." She reported that her performance suffered from lack of confidence in herself and her ability. She could not see her own progress, lacked motivation to push herself, and reported being comfortable with mediocre performance. Maria reported "I wouldn't say I was depressed, but I wasn't happy." She described herself as "emotionally weak" and stated that she would take "a lot of things to heart." For instance, when

her coaches gave her corrective feedback during practice, she would treat it as a “personal attack.” These perceptions resulted in Maria feeling stressed out and only reinforced her lack of motivation.

The quality of Maria’s relationships varied. Although her family members were generally supportive of her decisions and provided financial assistance, Maria felt that they did not show enough interest in her sport or provided enough encouragement and praise. In particular, she reported that she never had a good relationship with her sister, who would “never” hug or say that she loved her. She described her relationships with coaches as good, yet Maria thought that her coaches liked her as a person but not as an athlete because she “wasn’t as good as others on the team.” Maria stated that her relationships with teammates had always been good, yet she felt that she was not living up to their expectations and did not want to disappoint them. Maria’s relationships with non-teammate friends were affected by her sport participation. Although she wanted to spend time with them, she felt like she never had opportunities for it, which resulted in her feeling guilty. Maria also reported that her peers encouraged her to drink alcohol and use recreational drugs.

Along these lines, it should be mentioned that Maria first tried alcohol when she was 15 years old and tried smoking marijuana during her sophomore year of high school. She stated that curiosity about her friends’ use led her to try alcohol and marijuana herself. Just prior to seeking intervention services, Maria had been occasionally using alcohol in social contexts and had been abstaining from sex due to religious reasons.

Assessment

Pre-intervention, post-intervention, 1- and 5-month follow-up. Upon self-referral to the program, Maria consented, met the inclusion criteria, and was scheduled for a 2-hour

baseline assessment within a week following consent. She completed a comprehensive battery of standardized tests and measures administered by a trained technician 8 days prior to intervention to assist in determining personalized goals. Maria completed the same battery of assessment measures 5 days after intervention completion to determine the immediate effects of intervention and 41 and 141 days after intervention completion to determine the effects of intervention over time. This assessment battery included the following measures:

Demographics Form. The Demographics Form was utilized at baseline assessment to obtain demographic information, including gender, age, ethnicity, sport, referral source, marital status, income, employment status, and educational level.

Semi-Structured Clinical Interview. The Semi-Structured Clinical Interview was utilized to assist in better understanding the history of each specific aim in the study. Specific questions included history of substance use, unprotected sex, sport performance, and relationships with teammates, coaches, family members, and peers.

Structured Clinical Interview-I for DSM-IV (SCID-IV). The SCID-IV (First, Spitzer, Gibbon, & Williams, 2002), a structured diagnostic interview, was used to assist in determining psychiatric symptoms that are consistent with the DSM-IV-TR axis I diagnoses. The SCID-IV is designed to be administered by a clinician or a trained mental health professional and is composed of separate modules, which correlate to categories of diagnoses. All diagnoses symptoms are coded as present, sub threshold, or absent and as current or in remission, and a final decision is made regarding the presence of a diagnosis. Administrations of this test yield good validity and reliability (Spitzer, Williams, Gibbon, & First, 1992). For the purpose of this study, SCID-IV Axis I diagnoses, including the psychotic module (to determine in/exclusionary criteria), were assessed during baseline assessment only.

Semi-Structured Interview for Consideration of Ethnic Culture Scale (SSICECS). The SSIECTS (Donohue, Strada, et al. 2006) was used at the baseline assessment only to address potential cultural issues that are relevant to intervention planning. The SSIECTS includes seven items: four of them query about positive experiences regarding ethnic background (Ethnic Cultural Importance scale; ECI) and three of them query about negative experiences (Ethnic Cultural Problems; ECP). Therapists who implement SSICECS demonstrate interest and compassion through open-ended queries, affirmations, and empathic statements. In an RCT involving collegiate students of various ethnicities (Donohue, Strada, et al., 2006) the implementation of this interview (as compared with an identical interview relevant to students' sport/exercise background) enhanced participants' perceptions of the interviewers' knowledge and respect for their ethnic background. Both interview formats (ethnicity, sport/exercise) significantly improved therapeutic rapport, and perceptions of the interviewers' therapeutic skills according to the participants. Initial psychometric evaluation of the SSICECS yielded acceptable internal consistency for all item scores (Cronbach's α coefficient = .78) and good internal consistency for Factor 1 (ECI; α = .78) and Factor 2 (ECP; α = .82) (Donohue, Strada, et al., 2006).

Sport Interference Checklist (SIC). The SIC (Donohue, Silver, et al., 2007), a 26-item self-report inventory, was utilized to assess a wide range of cognitive and behavioral problems that commonly interfere with sport performance. Participants report the extent to which various factors interfere with their sport performance in training (Problems in Sport Training Scale; PSTS) and in competition (Problems in Sport Competition Scale; PSCS), utilizing a seven-point scale (anchored by 1= Never, 7 = Always), and whether they desire sport psychology assistance in problematic areas (Desire for Sport Psychology Scale, DSPPS), utilizing yes/no response

format. The PSTS and DSPS include four factors (Dysfunctional Thoughts and Stress, Academic Problems, Injury Concerns and Poor Team Relationships) and the PSCS includes six factors (Dysfunctional Thoughts and Stress, Academic and Adjustment Problems, Lack of Motivation, Overly Confident/Critical, Injury Concerns, and Pain Intolerance). Initial psychometric evaluation of the SIC yielded high to excellent internal consistency (Cronbach's α coefficients for PSTS items = .91, PSCS items = .92, and DSPS items = .95; Donohue, Silver, et al., 2007).

Student Athlete Relationship Instrument (SARI). The SARI (Donohue, Miller, et al. 2007), which includes four inventories, was utilized to assess each relationship domain that might interfere with sport performance (i.e., Family, Coaches, Teammates, and Peers). Utilizing a seven-point scale, participants are instructed to indicate the degree of agreement or disagreement (anchored by 1= Extremely Disagree, 7= Extremely Agree) about how much a particular relationship interferes with their sport performance. Subscales across the four inventories include pressure to perform, lack of support, pressure to use illicit substances, pressure to quit sports or continue unsafely, experiencing embarrassing comments and negative attitude, lack of concern for teamwork and safety, lack of involvement and high expectations, too demanding, not a team player and too non-competitive. Initial psychometric evaluation of the SARI yielded high internal consistency for all scales (Cronbach's α coefficients for Teammates = .93, Coaches = .96, Family Members = .92, and Peers = .87; Donohue, Miller, et al., 2007).

Symptom Checklist 90 – Revised (SCL90-R). As one of the most widely utilized scales, the SCL90-R (Derogatis, 1977; Derogatis, 1994; Derogatis, Rickels, & Rock, 1976) was used to assess a broad range of psychological problems and symptoms of psychopathology. It is designed to provide an overview of a patient's symptoms and their intensity at a specific point in time. The SCL-90-R test contains 90 items that measure nine primary symptom dimensions,

including 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). In addition, three Global Indices measure overall psychological distress (Global Severity Index; GSI), the intensity of symptoms (Positive Symptom Distress Index; PSDI), and number of self-reported symptoms (Positive Symptom Total; PST). The internal consistency coefficients for the nine symptom dimensions were derived from two sources and ranged from low Cronbach's α coefficient of .77 for Psychoticism dimension to high Cronbach's α coefficient of .90 for Depression dimension (Derogatis et al., 1976; Horowitz, Rosenberg, Baer, Ureño, & Villaseñor, 1988). Additionally, Derogatis (1977) reported high test-retest reliability.

HIV Risk Assessment Battery (HIV RAB). The HIV RAB (Metzger, Nalvaline, & Woody, 2001), a valid and reliable self-report measure, was utilized to determine the presence of HIV risk behaviors. It was originally developed for use in substance abusing populations. The RAB offers an efficient tool for screening individuals who may be at risk for HIV infection. HIV RAB includes 16 items which yield three global subscales measuring Drug-Risk, Sex Risk, & Total Risk.

Beck Depression Inventory – II (BDI-II). The BDI-II (Beck et al., 1996), one of the most widely utilized measures for adolescents and adults, was used to assess depressive symptoms that are consistent with the depression criteria of the DSM–IV. The BDI–II consists of 21 items that assess the intensity of depression in clinical and non-clinical patients. The BDI-II yields high reliability for the outpatient population ($n = 500$; Coefficient Alpha = .92) and the college students population ($n = 120$; Coefficient Alpha = .93). In addition, BDI-II has high test-retest reliability of .93 obtained from a study of 26 outpatients (Beck et al., 1996).

Timeline Followback (TLFB). The TLFB (Sobell, Brown, Leo, & Sobell, 1996; Sobell, Sobell, Klajner, Paven, & Basian, 1986) was used to assess relatively precise estimates of daily patterns and frequency of use of alcohol, marijuana, and other illicit substances. Using a calendar, participants provide retrospective estimates of their daily substance use over a specified time period that can vary up to 24 months from the interview date, including the specific substance(s) used and the amount. The month-by-month calendar includes memorable events (e.g., holidays, birthdays, work schedules) to enhance recall of the days in which substances were used. The TLFB yields excellent psychometric support (see Carey, 1997; Donohue et al., 2004).

Client Satisfaction Questionnaire-8 (CSQ-8). The CSQ-8 (Larsen, Attkisson, Hargreaves, & Nguyen, 1979), a brief 8-item questionnaire (4-point scale), was utilized to measure client satisfaction with services received. A total score can be calculated by summing the responses to all 8 items, which produces a range of 8 to 32, with high scores reflecting higher satisfaction. The CSQ-8 yields excellent reliability and internal consistency (Attkisson & Zwick, 1982).

Optimal Number of Meetings Item. This one-item measure was used to assess the client's satisfaction with the number of sessions received during the program. Clients can choose their response from number of options, including "too few," "too many," and "just right," and can indicate an optimal number of sessions.

Assessment data management. The data, obtained in paper-and-pencil and computer output formats, was entered into SPSS statistical software for analysis using a double-entry procedure. To minimize data entry errors and ensure a high level of accuracy, two teams of undergraduate research assistants worked independently. The entered data was compared and,

when discrepancies were identified, the raw data was retrieved for verification and correction of errors.

Pre-intervention assessment results. According to the SCID-IV results, Maria did not evidence any DSM-IV diagnostic criteria. She also did not endorse any HIV risk behaviors according to the HIV RAB measure. Table 1 includes Maria's responses to the SIC, SARI, SCL-90-R, and BDI-II measures. Although, Maria's pre-intervention results on these measures were not in the clinically significant range, they were not optimal. Her pre-intervention SIC results indicated that she experienced high levels of dysfunctional thoughts and stress in both training and competition. She also reported difficulties with motivation and injury concerns that interfered with her performance, especially during competition. The SARI pre-intervention results revealed that Maria experienced difficulties in her relationships with teammates, coaches, family members, and peers that were affecting her training and competition. She reported having poor relationships with and lack of support from people in all four domains. For instance, Maria described feeling that she was not living up to the expectations of her teammates and reported receiving comments that made her feel guilty. She stated that some of her family members did not show interest, disagreed with her decisions, made rude comments about her, and had a negative attitude towards her. Maria additionally reported experiencing pressure to drink alcohol and use recreational drugs from her non-teammate friends and described feeling guilty from the things they said. Maria's pre-intervention results on the SCL-90-R (reported in *T*-scores) indicated elevations (i.e., 1 SD or more above the mean of 50) on most mental health symptom dimensions, including Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Phobic Anxiety, Paranoid Ideation, Psychoticism, and the Global Severity

Index. The pre-intervention BDI results revealed that Maria experienced minimal levels of depression, which was consistent with her SCL-90-R Depression dimension results.

Table 2 includes Maria's assessment results for the TLFB. TLFB results are presented as actual occurrences of each behavior during the respective time period. During the 120 day period prior to intervention, Maria reported 4 days of alcohol use, 2 occurrences of binge drinking, and 14 drinks. She additionally worked 272 hours during this time period.

Case Conceptualization

Maria's case was conceptualized from a cognitive-behavioral perspective, emphasizing the importance of others. Maria's difficulties with motivation and lack of self-confidence were primarily developed from having critical albeit loving parents with very high standards. For instance, they modeled and encouraged her to attempt performance scenarios that were relatively difficult to achieve and subsequently provided her critique and intermittent praise to assist her in learning to perform. As tasks increasingly became more difficult, she had a tendency to focus on the negative aspects of her performance believing this focus would assist her in avoiding mistakes, which temporarily relieved her anxiety through negative reinforcement. For similar reasons, she tended to focus on outcomes, unrealistic goals, what others think of her, and she compared herself to other people. Her outcome-oriented thoughts and unrealistic goals led to high performance expectancies and often resulted in an inability to fulfill these expectations. Maria's outcome-oriented thoughts, along with comparisons to others and subsequent self-criticism, resulted in reduced focus on important elements of performance and disrupted flow, causing poor execution of skills. Similarly, because Maria frequently worried about what her coaches and teammates thought of her and also compared herself with her teammates, it was difficult for her to focus on the task at hand (including the provision of accurate feedback) during

her performances. Lack of focus often led to non-optimal performance, thereby confirming her negative beliefs about self, and reducing her self-efficacy and motivation.

Maria's negative thinking likely contributed to her mildly elevated mental health symptoms, including depressive and anxiety symptoms, which in turn resulted in reduced motivation. For example, consistent with depression, she felt like a failure; was discouraged about her future; felt less worthy and more critical of herself; lost confidence in herself; had difficulty making decisions, sleeping, and concentrating; and fatigued easier. Consistent with anxiety symptoms, she worried too much about things; felt fearful; experienced nervousness or shakiness inside and heart pounding; felt that people disliked her and talked about her; and felt inferior to and underappreciated by others. These mental health symptoms commonly result in anhedonia (i.e., lack of interest in enjoyable activities), reduced motivation, and avoidance behaviors (Pizzagalli, 2014), which made it more difficult for Maria to motivate and push herself in practices. These experiences also led her to consider quitting her sport, which associated her sport participation with further anxiety, and in turn thoughts of occasional quitting or lack of desire to practice.

Maria's negative thinking style also affected her relationships with her coach and teammates. Maria experienced cognitive distortions in response to feedback, including underestimating positive feedback and overestimating criticism and a heightened level of attention to information that "confirmed" her negative beliefs about self. For example, Maria often misinterpreted the coach's feedback as criticisms, personal attacks, and verifications that she was "not good." Although Maria's coach was highly committed to supporting her in practices (e.g., spending extra time) as well as outside of sports (e.g., motivating Maria to stay when she wanted to quit the team), Maria frequently dismissed such evidence of the quality of

their relationship, attributing these behaviors to normal coaching obligations. Along these lines, because Maria held her coach and teammates in high esteem and wanted to impress them, she was afraid of disappointing them by “messaging up.” This focus on avoiding the undesired behavior reduced Maria’s focus on the task at hand and led to hesitations and errors during practice, which in turn resulted in a perception that others do not like her. It is not surprising that Maria’s negative interpretations of feedback led to elevated levels of stress and, subsequently, lack of desire to improve.

Maria’s relationships with her family members and non-teammate friends also played a role in her symptom presentation. Specifically, lack of parental praise and engagement in Maria’s sport undermined her sport-related motivation and conveyed a message that her sport was not important. Combined with her negative self-beliefs and a history of less than optimal collegiate sport performance, this perceived lack of concern from her family members influenced Maria to lose her ambitions. Additionally, Maria’s inability to spend time with her non-teammate friends due to her sport commitments created feelings of isolation and guilt. To reduce these feelings and “fit in,” Maria would go to parties where she was at higher risk for peer-induced substance use.

Although Maria did not engage in frequent drinking prior to seeking services, she experienced some binge drinking. Her alcohol use was likely influenced by social anxiety and lack of confidence. Indeed, in some cases, alcohol has been found to influence social anxiety by allowing the person to relax and increasing confidence (Martens et al., 2003) due to the disinhibiting effects of alcohol on the frontal lobe (Chen et al., 2007). Unfortunately, these contingencies often result in attributing such confidence and relaxation to alcohol, thus reinforcing its use in social situations.

Course of Intervention and Assessment of Progress

Intervention. Maria's PC was a 23-year old post-baccalaureate student with a background in intercollegiate athletics, who was comprehensively trained in the intervention delivery. As shown in Table 3, Maria attended all 12 of her scheduled intervention meetings that were focused on optimizing performance in sports, mental health, relationships, safe sex, and avoidance of drug and alcohol use. At least one significant other was present in each intervention meeting: Maria's head coach attended all 12 meetings, two teammates attended some of the meetings, and an athletic staff member attended one intervention meeting. Meeting duration ranged from 62 to 96 minutes ($M = 80.08$, $SD = 12.52$) and intervention lasted 3 month and 17 days.

The principles, therapeutic style, and overarching procedures of TOPPS interventions were consistent with the existing FBT treatment manual for adults (Donohue & Allen, 2011), with some modifications to the existing protocols to tailor FBT for use in student-athletes. These modifications included evidence-supported engagement, cultural enlightenment, athlete-friendly nomenclature (e.g., PCs instead of "therapists"), and sport performance interventions. The interventions were usually implemented cumulatively and successively based on Maria's goals and the performance plan. That is intervention components were initially administered in the order determined by the performance plan and were reviewed as needed thereafter to a progressively lesser extent (see Table 3 for details). Summative information about the interventions implemented is included in Table 4. The content of each of these intervention components and Maria's response to them are described below.

Meeting Agendas (meetings 1-12). Each intervention session started with an effective Meeting Agenda. To elicit a positive mindset, Maria and her SOs were prompted to report

outstanding positive behaviors, consistent with their goals, and positive events, experienced by someone else they know, that occurred since the previous meeting. This permitted the PC to provide positive comments and descriptive praise, which are important for increasing the athlete's confidence and motivation for accomplishing goals (Weinberg & Gould, 2014b, 2014c). The PC then outlined planned interventions and estimated times for implementation. Maria and her SOs were invited to adjust intervention plans, including the selection, order, and duration of each agenda item, making the intervention more consumer-driven. The meeting participants preferred to maintain the proposed agenda items and implementation times in all 12 meetings. In meetings 11 and 12, Maria's coach and teammate volunteered positive feedback regarding Maria's progress, including an observed increase in confidence (in skill execution and overall demeanor), positive actions within the team, and a more upbeat attitude. Maria enjoyed hearing the positive statements and realizing that she had a positive influence on the team.

Meeting Conclusions (meetings 3-11). Starting with meeting 3, each intervention meeting ended with a structured Meeting Conclusion. The PC provided descriptive positive feedback about the completed meeting, reviewed Maria's practice assignments for the next meeting to assure completion, and prepared for the upcoming meeting (including scheduling and collaboratively determining SO involvement based on the tentative interventions to be implemented).

Program Orientation (meeting 1). The first meeting included structured Program Orientation to provide an overview of TOPPS, including its structure and program guidelines. During the Program Orientation, the participants discussed SO involvement (i.e., strategic, motivational), utilization of protocol checklists to guide meetings, scheduling of future meetings, communication guidelines, and ways the PC can be supportive with the athlete. Additionally,

Maria was queried about her thoughts and feelings relevant to attending TOPPS, which permitted the PC to assess the athlete's needs and motivational factors. For example, Maria stated that by attending TOPPS, she was modeling to her teammates the desire to improve, which was important for her given her history of motivational difficulties. Maria's coach expressed excitement and commended Maria for her desire to work on improving herself and growing as a person. During this orientation, Maria also asked about the TOPPS approach to alcohol use. It was explained that in the optimization model, the objective is to promote a state of optimal relaxation and confidence in social contexts, ideally without relying on external substances, thus allowing the person to take full ownership of their success. Furthermore, in this model, binge drinking is conceptualized as a problem behavior that puts the person at higher risk for negative consequences. Therefore, the primary focus is not necessarily on eliminating alcohol use altogether, but on reducing binge drinking.

Cultural Enlightenment (meeting 1). The initial meeting additionally included Cultural Enlightenment intervention to address Maria's cultural identity, importance of her ethnic culture, and any arguments or problems associated with her ethnic culture. Based on the results of the Semi-Structured Interview for Consideration of Ethnic Culture Scale (SSIECTS; Donohue, Strada, et al. 2006), Maria disagreed that her ethnic culture was a big part of her life, was important to her, or that there were many things that she liked about her ethnic culture. Similarly, she stated that she had not experienced negative comments or arguments due to her ethnic culture or that it would be important to consider her ethnic culture in program meetings. Because Maria reported little to no connection with her ethnic culture, the intervention was brief and permitted the PC to allocate more time to the following intervention component.

Dynamic Goals and Rewards (meetings 1-12). The Dynamic Goals and Rewards intervention is among the core interventions at TOPPS. It includes the development of cognitive and behavioral goals and rewards, contingent on weekly goal accomplishment, and goal monitoring in all subsequent meetings. Dynamic Goals and Rewards consists of four phases, including: (1) the PC reviewing assessment results to determine goal-worthy items and subscales (based on elevations); (2) collaboratively with the client, developing optimal goals based on these results; (3) the client, collaboratively with his or her SO(s), establishing support and rewards to inspire goal accomplishment; and (4) the client monitoring progress and goal achievement on a weekly basis. In addition to personal goals, TOPPS offers a number of programmatic goals (i.e., fundamental goals for everybody pursuing TOPPS intervention), including regular meeting attendance, SO involvement, completion of practice assignments, avoidance of substance use and gambling, and maintenance of optimal relationships with others.

Dynamic Goals and Rewards was implemented in every meeting, with the first two meetings utilized for goal development and strategies to assist goal achievement and the last 10 meetings for goal monitoring and progress review, with occasional addition of new goals or revisions to existing goals as indicated. In the first meeting, the PC provided a rationale for Dynamic Goals and Rewards, discussed expected benefits, and described the intervention phases. The rest of the initial meeting and the first part of the second meeting focused on goal generation and development of solutions to assist in goal accomplishment. During goal development, Maria expressed doubts about her ability to accomplish mental performance goals. The PC used a sport performance analogy to explain that optimizing mental performance can be difficult due to insufficient training and that it will improve with more practice. Maria agreed with the analogy and continued to persevere with her mental performance goals in subsequent meetings.

Throughout the rest of the Dynamic Goals and Rewards meetings, the PC and Maria focused on restructuring negative thoughts, increasing motivation and confidence, enhancing relationships and time-management, and establishing sport-specific strategies.

To modify negative thought patterns and increase motivation and confidence, the PC and Maria developed and collaboratively worked on a variety of goals. These goals included setting realistic expectations, challenging irrational negative thoughts as they occur, becoming more positive and praiseworthy of self (e.g., catching herself doing well, noting positive aspects of her performance, focusing on what she liked specifically and only then thinking of what she can improve), focusing on self and not others (e.g., redirecting focus by using thought stopping, using a focus cue word), and practicing being calm when observed by others (e.g., working on focus in practice, engaging in visualization of successful performance in front of others, proactively notifying teammates that she noticed her error and will work on it). Goals, specific to enhancement of motivation, included generating and utilizing motivational statements (e.g., “This is my time to shine”; Miller & Donohue, 2003), starting an “improvements column” in a notebook to work towards, focusing on specific things Maria loved about her sport, building new sport-specific skills only after mastering their respective prerequisites, and letting her coaches and teammates know what motivates her. Relevant cognitive strategies, such as motivational statements, were then integrated into performance situations and mental preparation routines via behavioral rehearsal and out-loud thinking.

Maria’s goals additionally included enhancement of relationships, time-management, and sport-specific strategies. To enhance relationships, the PC and Maria worked on developing assertiveness and communication skills. For example, Maria set a goal to proactively communicate concerns to her teammates, coaches, family members, and non-teammate friends

and seek collaborative solutions. She additionally worked on effectively requesting constructive feedback from her teammates and coaches and scheduling weekly activities with her non-teammate friends to reduce feelings of isolation and guilt. Specific relationship enhancement strategies can be reviewed under Reciprocity Awareness and Positive Request intervention sections below. Time-management strategies comprised of limiting social media access and using it as a reward contingent on goal accomplishment, increasing planning skills by using a calendar, and waiting one day before making an important decision. Sport-specific strategies included relaxation exercises (e.g., diaphragmatic breathing, muscle review), routine development (e.g., praying, a special team handshake to signal readiness), establishing and practicing competition flow (e.g., motivational statements followed by focus statements prior to the event; a state of “flow” during the event; and, immediately after the event, reviewing what specifically was liked about the event and what specifically can be improved next time), and injury prevention (e.g., stretching, using athletic tape).

To aid goal accomplishment, Maria’s SOs provided her with support and rewards for weekly goal accomplishment. Support could be provided at any time during the week. For example, Maria’s SOs passionately encouraged her, offered help in attaining specific goals, sent motivational text messages and reminders, and checked in with her throughout the week to review progress with goals. Rewards, on the other hand, could only be provided after completion of goals for the week. Maria and her SOs generated effective rewards that were commensurate with her goal achievement. Some examples of rewards included one-on-one time with the coach after practice to work on skills or have lunch together, receiving a positive letter from an upperclassman, and access to social media (time determined by the coach based on the percentage of goals accomplished).

As early as in the second meeting, Maria accomplished all of the program goals and began attaining many of her personal goals. For example, she showed progress in her ability to notice and restructure negative thoughts and reported improved communication with family members and non-teammate friends. Goal attainment is intended to increase the participant's self-efficacy, or confidence, through the observation of her own progress and feedback about her progress (Schunk, 1995). Indeed, in future meetings, Maria's coach and teammates commended her increased confidence during training, attributing it to her positive thinking and focus on the task at hand. Throughout the program, Maria maintained high goal achievement (approximately 95%), with the highest achievement occurring in the last few meetings, and brought her completed goals worksheet every week for review. Interestingly, closer to the end of the program, Maria noted that she was capable of achieving all of her goals without external motivation (i.e., rewards), suggesting that her goal achievement became more internally driven.

Performance Planning (meeting 3). Performance Planning is a collaborative intervention that permits the participants to determine the priority of intervention implementation from a menu of intervention options to assist with performance in sports and in life (see Appendix A). This strategy is intended to add consumer-driven nature to the TOPPS intervention, thus increasing participant motivation and engagement (Donohue & Allen, 2011). Performance Planning was implemented in the third meeting, following a review of Dynamic Goals and Rewards, with both Maria and her coach. The PC briefly explained all TOPPS interventions and queried Maria and her SO about the perceived helpfulness of each intervention component. The participants then ranked the interventions in the order of their perceived helpfulness and indicated how they arrived at such rankings. Maria and her coach's rankings were consistent and, based on the summative ranking, indicated the following order: Self-Control, Positive Request,

Reciprocity Awareness, Environmental Control, Financial Management, Job-Getting Skills Training (not implemented due to time), and Career Planning. The meeting participants were informed that the order and duration of implementation of each intervention component can be adjusted during meetings agendas if desired.

Self-Control (meetings 4 and 6). Self-Control is designed to teach participants to recognize and manage triggers (e.g., thoughts, images, feelings, and behaviors) that lead to undesired, impulsive behaviors through a step-by-step process. Self-Control was implemented two times, during which Maria learned and practiced to identify triggers to undesired behaviors (through backward chaining), use thought stopping, consider the negative consequences for self and others, relax (i.e., diaphragmatic breathing), generate alternative solutions, review pros and cons of these solutions, and engage in imagery of the selected alternative. Maria chose to practice Self-Control to prevent “overinvestment” in romantic relationships, including impulsive texting and worrying, and to reduce the risk of a sport-related injury (i.e., going to practice without stretching). Following the initial modeling by the PC, she did exceptionally well in her trials of Self-Control, demonstrating good relaxation and problem-solving skills. Maria’s SOs (i.e., coach and teammate) assisted with solution generation, adding helpful perspectives to the problem-solving process. Then, through a systematic review process, Maria and the PC evaluated the completed steps in terms of their correctness (on a 0-100% scale), discussed what was liked about each step and what could be enhanced, assessed the likelihood of an undesired behavior prior to using Self-Control and immediately after, and identified the most effective step. Interestingly, Maria reported that solution generation was the most effective step for her; thus, she was encouraged to emphasize this step in real-world situations when practicing all steps is not feasible (e.g., due to time constraints). Maria completed all of her assigned Self-Control

practice assignments for various situations and agreed to add generated solutions to her goals worksheet for daily monitoring. Throughout the program, Maria reported applying Self-Control to other situations (e.g., stopping negative thoughts about personal performance), thus demonstrating skill generalization.

Positive Request (meetings 5-6 and 8-10). The Positive Request intervention teaches participants positive communication skills that increase the likelihood of getting what is requested from another person without arguments. Utilizing a series of nine steps, the person (1) makes a specific request; (2) acknowledges how it might be difficult for another person to complete the request, thus assuring empathy and understanding; (3) mentions the expected benefits for both self and (4) another person, thus assuring reciprocity; (5) offers help in completing the request and (6) something that can be done in exchange; (7) states appreciation for request completion; (8) provides an alternative request; and (9) invites the person to generate their own alternative if the original request cannot be done.

Positive Request was implemented five times over the course of the program, with the initial meeting utilized for modeling and role-plays to assure skill acquisition and all subsequent meetings for review of in-vivo practice assignments completed by Maria. Both Maria and her SOs found this skill extremely helpful in requesting things from others as well as resolving conflicts and finding compromise. For example, Maria utilized Positive Request to ask her teammates for positive feedback when she does well and help in improving her technique, to invite her family members to athletic events and her sister to the lake, and to ask for more encouragement and praise from her family. Interestingly, after accepting Maria's request, her coach reported that she enjoyed the positive nature of the request and that it was difficult to say

“no.” Similarly, Maria’s teammate reported that Maria appeared more confident during the request and that it improved their relationship.

Reciprocity Awareness (meetings 6, 10, and 11). The Reciprocity Awareness intervention is designed to enhance relationships by having clients and their coaches, teammates, family members, and non-teammate friends share things they like, admire, respect, or appreciate about one another. The rationale for this intervention is built on the idea that individuals who provide reciprocal reinforcement tend to have better relationships. Reciprocity Awareness was implemented three times throughout the program and included both in-session positive exchanges guided by the PC and positive exchanges assigned for practice outside of TOPPS. Maria reported positive consequences as a result of utilizing Reciprocity Awareness in her relationships. For example, Maria described a significant improvement in her relationship with her sister who, for the first time, started spending more time with Maria, hugging her, and expressing that she loved her.

Environmental Control (meetings 7-10). The Environmental Control intervention involves restructuring the environment so that more time is spent with goal-compatible cues (or stimuli) and less time is spent with goal-incompatible cues. Environmental Control was implemented four times over the course of the program. During the initial meeting, the PC explained that certain environmental stimuli make goal attainment more or less likely to occur. Then, Maria and her SOs developed a list of cues (i.e., people, places, and situations) that facilitated Maria’s goal attainment (based on the previously developed goals) and a similar list of cues that hindered her goal attainment. For example, Maria identified specific teammates and non-teammates friends, community events, and reading, among other cues, as positive influences to her goals. Similarly, she identified her ex-boyfriend, parties, and being bored, among other

things, as stimuli that made it more difficult for her to achieve her goals. Once these cues were established, Maria and her SOs brainstormed ways to increase time and enjoyment with cues that were associated with goal accomplishment and to decrease time with cues that were incompatible with goal accomplishment. Additionally, to increase positive social activities, Maria and her SOs scheduled several fun activities to enjoy prior to each subsequent meeting. For example, Maria went hiking with her coach and athletic staff member and bike riding with her teammate as part of her fun activities. Maria monitored how she was spending her time each week and then reported her accomplishments in subsequent meetings. With each future implementation of Environmental Control, Maria reported spending progressively less time with goal-incompatible cues and more time with goal-compatible cues, indicating that she was developing better control over her environment.

Career Planning (meeting 9). The Career Planning intervention is designed to prepare athletes for their dream career. The PC and Maria discussed important aspects of the most desired career (e.g., financial situation, travel, benefits, flexibility) and generated steps that would be necessary to make the dream career happen. Maria and her coach identified important educational prerequisites, qualifications, and specific people (including SOs) who can assist in achieving the dream job. Additionally, Maria was encouraged to add the newly developed ideas to her goals worksheet and start working towards her dream career. Maria found Career Planning extremely helpful and was able to make progress before completion of the program. For example, with assistance from her coach, Maria established networking relationships with individuals who could facilitate her dream career.

Financial Management (meeting 11). The Financial Management intervention teaches optimal financial management skills, including learning to increase income and decrease

expenses. Maria and her SOs first identified monthly expenses within different domains (e.g., school, living, sport-related) and monthly income from various sources. Then the difference between income and expenses was calculated to determine the extent to which Maria was in financial surplus or deficit. The calculated amount revealed that Maria was in a financial deficit. The next step involved collaboratively brainstorming ways of decreasing the expenses and increasing income. Maria and her SOs actively participated in this phase, making it more dynamic and helpful. The projected amount of extra income was calculated based on identified savings and gains and indicated that Maria could increase her income by \$670 per month, thereby turning her financial situation into surplus. Lastly, Maria and her SOs developed plans in implementing money-saving and income-generating strategies and added them to her goals worksheet for daily monitoring.

Last Meeting: Intervention Generalization (meeting 12). As the name indicates, the Last Meeting: Intervention Generalization was implemented during the last meeting at TOPPS and involved the following steps: (1) reviewing overall progress in optimizing performance within specific target areas, including relationships, sport performance, mental health, avoidance of substance use, and prevention of STIs and risk factors for HIV; (2) establishing ways Maria could maintain progress in the future, including which specific skills or information reviewed during the program can be used; and (3) to end the program on a positive note, exchanging what was loved, admired, respected, or appreciated about all persons involved into Maria's optimization process, including the PC.

Maria stated that her relationships within the team, with non-teammate friends, and family have improved. For example, within the team, Maria reached out to many of her teammates and established positive relationships through improved communication and social

activities. Similarly, she was able to increase interactions with non-teammate friends who were a positive influence in her life and reduce interactions with those who affected her life in a negative way. Lastly, Maria was able to enhance her relationships with her parents and sister by increasing positive communication and involving them more in her sport life. Maria's coach summarized that Maria found a good balance between her sport, academics, and social life, without having one area interfere with the others.

Drastic improvements occurred in the sport performance domain. Closer to the completion of the program, Maria made the team to go to Nationals for the first time. The PC, Maria, and the coach reviewed numerous factors that influenced Maria's success, including confidence, focus, relationships, and support from coaches, teammates, and family. Maria acknowledged that enhanced relationships contributed the most to the desire to push herself in training and competition. The coach commended Maria's hard work and perseverance and stated that she was proud of her accomplishments.

In the mental health domain, Maria reported reduced negative thoughts and increased confidence, focus, and motivation. Because Maria established an open, positive communication with her coach, it made it easier for the coach to train Maria in the most optimum way. For instance, Maria and her coach described being able to "meet in the middle" – while Maria's coach started providing more encouragement following Maria's positive request, Maria "toughened up" and started taking constructive criticism better. Notably, although the content of the coach's criticism generally remained the same, Maria's interpretation of it has shifted. For example, instead of taking criticism as a personal attack, she thought that her coach really wanted to help. This example, among others, demonstrated that Maria got better at flipping her

negative thoughts into positive, which in turn positively influenced her confidence, focus, and motivation.

In regards to substance use and HIV/STI risk behaviors, Maria reported maintaining abstinence. She stated that, even though she rarely used substances in the past, it became easier to avoid alcohol use because she started spending more time with people who do not drink. In the situations when alcohol was available, Maria resisted more effectively by utilizing self-control skills. Maria stated that she continued to abstain from sex because she wants to be establish a trustful relationship with her partner first. She reassured that when the time comes, she will be “smart” about engaging in safe intimate practices (e.g., using condoms, monogamous relationship, doing STI check together with the partner).

Intervention integrity. To ensure implementation integrity in FBT, several strategies, consistent with Yeaton & Sechrest (1981) were employed, including use of the treatment manual (i.e., Donohue & Allen, 2011); documentation of techniques used during sessions, student-athlete’s level of engagement, and progress towards personal and programmatic goals; audio-recording of sessions; 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; independent raters’ review of the PC’s audio recordings to evaluate protocol adherence and measure inter-rater reliability; and consumer satisfaction (i.e., “Athlete’s Helpfulness Ratings” on 7-point scale for each intervention component and the ability to modify the order and dosage of intervention implementation via Meeting Agendas and Performance Planning).

Protocol adherence. Clinical data and audio recordings were reviewed to assess intervention integrity in this study. Intervention integrity scores were calculated in a three-step

process. First, validity ratings were computed in terms of the PC's own adherence to intervention protocols (see Table 3). The PC's protocol adherence across the 12 intervention meetings was 99.36% (SD = 2.5%, range = 85-100%). Second, 10 percent of session audio recordings were randomly selected and reviewed by independent raters to calculate the PC's adherence to intervention protocols. Third, reliability ratings between the PC and independent raters were computed in terms of inter-rater agreement and indicated an average reliability of 97.78% (SD = 6.67%, range = 80-100%). Because all interventions demonstrated 80 percent and above adherence to intervention protocols and inter-rater reliability scores were consistent with the PC's adherence scores, TOPPS interventions in this study were considered to have been implemented with high integrity.

Consumer satisfaction and compliance ratings. Table 4 includes information on client helpfulness ratings and PC ratings of client's compliance (both on a scale 1 through 7) for each intervention component. Maria found all intervention components to be "Extremely Helpful," and she was "Extremely Compliant" during the meetings as rated by the PC. Compliance ratings were based on attendance, participation and conduct in the meetings, and homework completion. Additionally, the CSQ-8 and the Optimal Number of Meetings Item results revealed that Maria was highly satisfied with the intervention and that the number of sessions was "Just Right."

Post-intervention assessment results. Maria completed a post-intervention assessment five days after intervention completion. Her post-intervention responses to the SIC, SARI, SCL-90-R, and BDI-II measures are reported in Table 1. Maria demonstrated substantial reductions on all measures. Her post-intervention SIC results indicated that she considerably reduced her Dysfunctional Thoughts and Stress (58.25%), Academic Problems (37.45%), Injury Concerns (54.5%), and Poor Team Relationships (60%) during training. She demonstrated similar

reductions in the competition domain. Her Dysfunctional Thoughts and Stress reduced by 59.25%, Academic and Adjustment Problems by (40.12%), Lack of Motivation by 73.33%, Injury Concerns by 60%, and Pain Intolerance by 50%. Maria's Overly Confident and Critical score remained the same at a relatively low level. The SARI post-intervention results revealed that Maria considerably reduced problems in her relationships with teammates, family members, coaches, and peers. For example, Poor Relationships and Lack of Support reduced by 67.88% with teammates, 66.67% with family members, 64.31% with coaches, and 73.66% with non-teammate friends. Poor Relationships with teammates reduced by 70.83%, while Not a Team Player and Too Non-competitive reduced by 75%. Pressure to Use Illicit Drugs and Pressure to Drink Alcohol from teammates reduced by 60% and 77.78%, respectively. Similarly, pressure from peers relevant to the Use of Recreational and Performance-enhancing Substances reduced by 78.99%. Maria reported that General Pressure and Embarrassing Comments and Negative Attitude from family members reduced by 69.97% and 75%, respectively. Similarly, Lack of Concern for Teamwork and Safety, Lack of Involvement and High Expectations, and being Too Demanding from coaches also reduced by 42.92%, 61.54%, and 69.97%, respectively. Maria's post-intervention results on the SCL-90-R (reported in *T*-scores) indicated significant reductions of more than one standard deviation on most mental health symptom dimensions, including Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Phobic Anxiety, Paranoid Ideation, Psychoticism, and the Global Severity Index. Lastly, Maria's BDI Total score went from 9 to 0.

Table 2 includes Maria's post-intervention results for the TLFB. During the 120 day intervention period, Maria reported complete abstinence from alcohol use. During this time period she additionally increased her working hours from 272 hours at baseline to 408 hours.

Follow-up assessment results. The follow-up assessments were conducted 41 and 141 days after intervention completion to determine whether intervention results sustained over time (see Tables 1 and 2). Maria's results on the SIC, SARI, BDI, and SCL-90-R measures were largely maintained at both follow-ups (see Table 1). Her SIC results indicated that greater than 50% reductions were maintained in Dysfunctional Thoughts and Stress and Injury Concerns during training and Lack of Motivation, Injury Concerns, and Pain Intolerance during competition. Improvements in Dysfunctional Thoughts and Stress during competition reduced from 59.25% at post-assessment to 50% at 1-month follow-up and 31.25% at 5-month follow-up. Interestingly, Maria's Overly Confident and Critical score reduced from no change at post-assessment to 40% at 1-month follow-up and 20% at 5-month follow-up. The SARI follow-up results revealed that greater than 50% reductions in relationship problems were maintained on all SARI Teammates, Family, and Peers subscales. SARI Coaches results were maintained at greater than 40% reduction from baseline assessment. Maria endorsed few symptoms of depression as indicated by her BDI Total score of 1 at 1-month follow-up and score of 3 at 5-month follow-up. On the SCL-90-R, Maria maintained reductions of more than one standard deviation on Interpersonal Sensitivity, Depression, Anxiety, Phobic Anxiety, Paranoid Ideation, Psychoticism symptom dimensions, and the Global Severity Index. Her score reductions on Obsessive-Compulsive and Hostility symptom dimensions were maintained at a level just below one standard deviation. Lastly, her score on Somatization remained one standard deviation below baseline at 1-month follow-up and then increased up to the baseline level at 5-month follow-up.

Table 2 includes Maria's follow-up results for the TLFB. Maria reported 1 day of alcohol use (3 drinks) at 1-month follow-up and 3 days (6.5 drinks) at 5-month follow-up. However, she reported 0 days of binge drinking. Additionally, Maria worked 93.5 hours between her post-

assessment and 1-month follow-up (36 day period), and 195 hours between her follow-ups (100 day period).

Lastly, Maria's improvements extended beyond the study results. Following the completion of TOPPS, Maria and her team won the Nationals. This was the highest accomplishment Maria ever achieved in her sport up to that time. Although Maria was convinced that TOPPS contributed to her success, this anecdotal finding should be interpreted with caution as there may be a number of other influences.

Complicating Factors

TOPPS is a supportive other based program; PCs attempt to recruit as many persons as possible to participate in meetings with the athlete. Unfortunately, Maria's family members were not able to get involved due to scheduling conflicts. Nevertheless, they actively participated in Maria's homework assignments (e.g., Positive Request, Reciprocity Awareness).

Treatment Implications of the Case

The results of this study assist in demonstrating that cognitive and behavioral performance in mental health, sport performance, and relationships with coaches, teammates, family members, and peers can be substantially improved through optimization programs, like TOPPS, in athletes who do not evidence significant pathology or impairments in functioning. This finding is particularly relevant to the student-athlete population because these programs reduce stigma that is associated with traditional psychological treatment programs (Corrigan, 2004; López & Levy, 2013).

Limitations

The lack of bi-directional assessment measure (i.e., negative and positive construct dimensions) that can assess progress beyond the absence of pathology is a concern when

assessing the impact of optimization programs, such as the one in the current evaluation. Along these lines, Maria's baseline scores on the SIC, SARI, BDI and TLFB suggested she was not evidencing pathology as measured by these scales. However, it is impossible to determine the extent to which her noted improvements on these scales from baseline to post- and follow-up assessments were optimized. Additionally, although Maria presented to TOPPS with a desire to improve her confidence, no direct measures of confidence were utilized in this study.

APPENDIX

FBT Interventions Menu

	FBT Intervention Components	Intervention Purpose
1	Orientation	Formal orientation to FBT
2	Cultural Enlightenment	Determining the extent to which ethnic and sport culture will be considered in meetings
3	Dynamic Goals and Rewards	Setting and maintaining performance goals and establishing rewards for goal accomplishment
4	Performance Planning	Reviewing a menu of intervention options and subsequently ranking for intervention priority
6	Positive Request	Communication skills training specific to learning to optimally settle disagreements and request things from others
7	Reciprocity Awareness	Establishing strong relationships w/ significant others
8	Environmental Control	Determining and managing goal consistent and inconsistent stimuli interfering with or facilitating goal accomplishment
9	Self-Control	A cognitive method of terminating impulsive problem behaviors, generating solutions, and visualizing selected plans
10	Job-Getting Skills Training	Developing skills to achieve optimum employment
11	Financial Management	Learning how to decrease expenses and increase income
12	Career Planning	Determining an optimum career plan, including how to prepare for a dream job
13	Goal Inspiration	Inspiring motivation for goals by reviewing positive consequences of goal accomplishment
14	Performance Timeline	Determining when and how to enhance factors that contribute to optimum performance in sport and life situations/events
15	Pre-performance Mindset Training	Establishing optimum mindset prior to important events
16	Post-performance Mindset Training	Establishing optimum mindset after events

Note: Job-Getting Skills Training intervention was not implemented due to time. Goal Inspiration, Performance Timeline, and Pre- and Post-performance Mindset Training interventions were not yet developed at the time of this study. These components are being currently evaluated in a clinical trial with student-athletes.

Table 1
Pre, Post, and Follow-up Results for SIC, SARI, SCL-90-R, and BDI-II

Variable	Pre-Assessment	Post-Assessment	1 Month Follow-up	5 Month Follow-up
<i>SIC Training</i>				
Dysfunctional Thoughts and Stress	4	1.67 (58.25%)	2 (50%)	1.83 (54.25%)
Academic Problems	2.67	1.67 (37.45%)	2 (25.09%)	2 (25.09%)
Injury Concerns	3.67	1.67 (54.5%)	2 (45.5%)	1.67 (54.5%)
Poor Team Relationships	2.50	1 (60%)	1 (60%)	2 (20%)
<i>SIC Competition</i>				
Dysfunctional Thoughts and Stress	4	1.63 (59.25%)	2 (50%)	2.75 (31.25%)
Academic and Adjustment Problems	1.67	1 (40.12%)	1.33 (20.36%)	1.67 (0%)
Lack of Motivation	3.75	1 (73.33%)	1.25 (66.67%)	1.75 (53.33%)
Overly Confident and Critical	2.50	2.50 (0%)	1.50 (40%)	2 (20%)
Injury Concerns	5	2 (60%)	1.50 (70%)	2 (60%)
Pain Intolerance	3	1.50 (50%)	1.50 (50%)	1.50 (50%)
<i>SARI Teammates</i>				
Poor Relationship and Lack of Support	4.67	1.50 (67.88%)	1.33 (71.52%)	1.50 (67.88%)
Pressure to Use Illicit Drugs and Being Difficult During Training	2.50	1 (60%)	1.25 (50%)	1 (60%)
Not a Team Player and Too Non-competitive	6	1.50 (75%)	1.50 (75%)	1 (83.33%)
Poor Relationships	6	1.75 (70.83%)	1.50 (75%)	2.75 (54.17%)
Pressure to Drink Alcohol and Interfere During Competition	4.50	1 (77.78%)	1.50 (66.67%)	2 (55.56%)
<i>SARI Family</i>				
Poor Relationship and Lack of Support	5.40	1.80 (66.67%)	2.40 (55.56%)	1.60 (70.37%)
General Pressure	3.33	1 (69.97%)	1.17 (64.86%)	1 (69.97%)
Pressure to Quit or Continue Unsafely	2	1 (50%)	1 (50%)	1 (50%)
Embarrassing Comments and Negative Attitude	6	1.50 (75%)	1.50 (75%)	2 (66.67%)
<i>SARI Coaches</i>				
Poor Relationship and Lack of Support	3.11	1.11 (64.31%)	1 (67.85%)	1.67 (46.3%)
Lack of Concern for Teamwork and Safety	2.33	1.33 (42.92%)	1.33 (42.92%)	1.33 (42.92%)
Lack of Involvement and High Expectations	3.25	1.25 (61.54%)	1.25 (61.54%)	1.75 (46.15%)
Too Demanding	3.33	1 (69.97%)	2.33 (30.03%)	1.33 (60.06%)
<i>SARI Peers</i>				
Poor Relationship and Lack of Support	5.43	1.43 (73.66%)	1.43 (73.66%)	2 (63.17%)
Use of Recreational and Performance-enhancing Substances	6.33	1.33 (78.99%)	1.33 (78.99%)	1.67 (73.62%)
<i>SCL-90-R</i>				
Somatization	0.75 (60)	0.17 (46)	0.25 (49)	0.67 (58)
Obsessive-Compulsive	1 (62)	0.20 (48)	0.10 (44)	0.40 (53)
Interpersonal Sensitivity	1.22 (67)	0 (39)	0 (39)	0 (39)
Depression	0.85 (60)	0 (34)	0 (34)	0 (34)
Anxiety	0.90 (63)	0 (37)	0 (37)	0.10 (44)
Hostility	0.50 (57)	0.17 (48)	0.17 (48)	0.17 (48)
Phobic Anxiety	0.43 (61)	0 (44)	0 (44)	0 (44)
Paranoid Ideation	1 (63)	0.17 (49)	0 (41)	0 (41)
Psychoticism	0.30 (60)	0 (44)	0 (44)	0 (44)
Global Severity Index	0.74 (62)	0.07 (37)	0.07 (37)	0.19 (48)
<i>BDI-II</i>				
Somatic-Affective	4	0 (100%)	1 (75%)	2 (50%)
Cognitive	5	0 (100%)	0 (100%)	1 (80%)
Total	9	0 (100%)	1 (88.89%)	3 (66.67%)

Note: For SIC, SARI, and BDI, percent change from baseline is presented in parentheses. For SCL-90-R, T-scores are presented in parentheses (Mean=50, SD=10). Percentages are reported in relation to baseline.

Table 2

Pre, Post, and Follow-up Results for TLFB

Variable	Pre-Assessment	Post-Assessment	1 Month Follow-up	5 Month Follow-up
<i>Timeline Followback</i>	120 day period	120 day period	36 day period	100 day period
Alcohol Days	4	0	1	3
Binge Drinking Days	2	0	0	0
Number of Drinks	14	0	3	6.5
Hours Worked	272	408	93.5	195

Table 3

Intervention Meeting Format and Adherence of Provider to Intervention

Meeting	Time (min)	Supportive Other	Intervention Component	Protocol Adherence %	Duration (min)
1	65	Head Coach	Agenda	85	4
			Program Orientation (I)	100	10
			Cultural Enlightenment (I)	100	3
			Dynamic Goals & Rewards (I)	100	47
2	96	Head Coach	Agenda	100	2
			Dynamic Goals & Rewards (I)	93	94
3	78	Head Coach	Agenda	100	6
			Dynamic Goals & Rewards (F)	100	55
			Performance Planning (I)	100	13
			Meeting Conclusion	100	4
4	70	Head Coach	Agenda	100	3
			Dynamic Goals & Rewards (F)	100	21
			Self-Control (I)	98	42
			Meeting Conclusion	100	1
5	93	Head Coach	Agenda	100	2
		PC's Supervisor	Dynamic Goals & Rewards (F)	100	41
			Positive Request (I)	98	30
			Meeting Conclusion	100	19
6	78	Head Coach	Agenda	100	4
		Teammate	Dynamic Goals & Rewards (F)	100	14
			Self-Control (F)	100	17
			Positive Request (F)	100	11
			Reciprocity Awareness (I)	100	25
			Meeting Conclusion	100	2
7	65	Head Coach	Agenda	100	5
			Dynamic Goals & Rewards (F)	100	17
			Environmental Control (I)	100	37
			Meeting Conclusion	100	5
8	62	Head Coach	Agenda	100	3
		Teammate	Dynamic Goals & Rewards (F)	100	17
			Environmental Control (F)	100	26
			Positive Request (F)	100	10
			Meeting Conclusion	100	3
9	83	Head Coach	Agenda	100	2
			Dynamic Goals & Rewards (F)	100	27
			Environmental Control (F)	100	23
			Positive Request (F)	100	6
			Career Planning (I)	100	18
			Meeting Conclusion	100	3
10	83	Head Coach	Agenda	100	2
		Athletic staff member	Reciprocity Awareness (F)	100	11
			Dynamic Goals & Rewards (F)	100	21
			Environmental Control (F)	100	18
			Positive Request (F)	92	14
			Meeting Conclusion	100	3
11	92	Head Coach	Agenda	100	4

		Teammate	Reciprocity Awareness (F)	100	12
			Dynamic Goals & Rewards (F)	100	21
			Financial Management (I)	100	55
			Meeting Conclusion	100	3
12	96	Head Coach	Agenda	100	6
			Dynamic Goals & Rewards (F)	100	34
			Last Meeting Review (I)	100	56

Notes: Protocol adherence was calculated using the number of protocol steps completed divided by the number of possible protocol steps, multiplied by 100 to obtain a percentage. (I) = initial implementation; (F) = future implementation.

Table 4

Information About the Interventions Implemented

Intervention	Times Implemented	Total Time (Min)	Average Time (Min)	Average Protocol Adherence (%)	Average Helpfulness Ratings	Average Compliance Ratings
Meeting Agenda	12	43	3.6	98.75	N/A	N/A
Meeting Conclusion	9	43	4.8	100	N/A	N/A
Cultural Enlightenment	1	3	3	100	N/A	N/A
Program Orientation	1	10	10	100	7	7
Dynamic Goals & Rewards	12	315	26.25	99.4	7	7
Performance Planning	1	13	13	100	7	7
Self-Control	2	59	29.5	99	7	7
Positive Request	5	71	14.2	98	7	7
Reciprocity Awareness	3	48	16	100	7	7
Environmental Control	4	104	26	100	7	7
Career Planning	1	18	18	100	7	7
Financial Management	1	55	55	100	7	7
Last Meeting Review	1	56	56	100	7	7

Note: Helpfulness and compliance ratings were not obtained for Meeting Agenda, Meeting Conclusion, and Cultural Enlightenment.

Figure 1. Cognitive-Behavioral Model Triangle

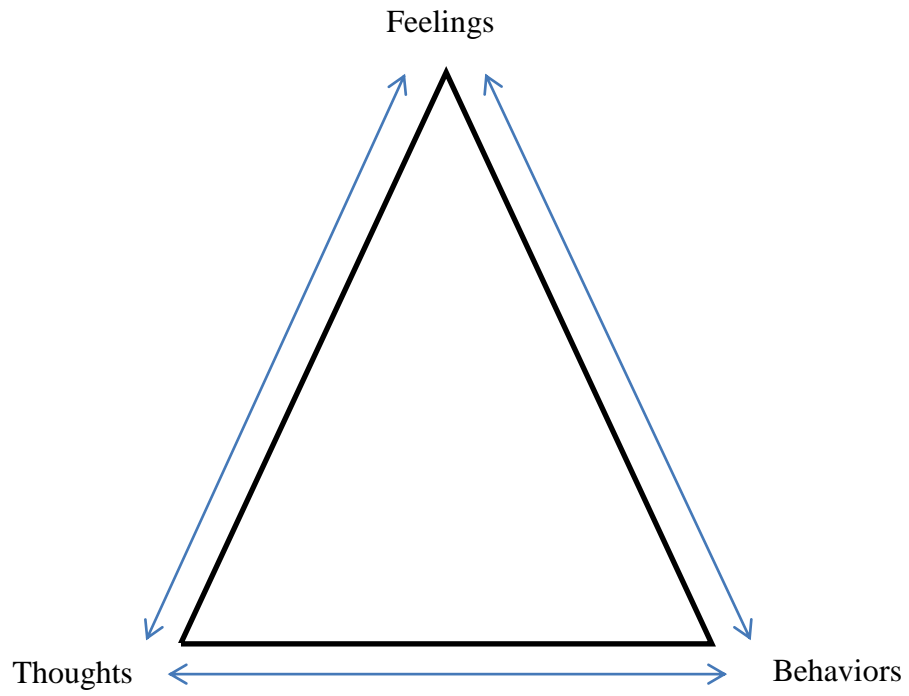


Figure 2. Performance Optimization Triangle

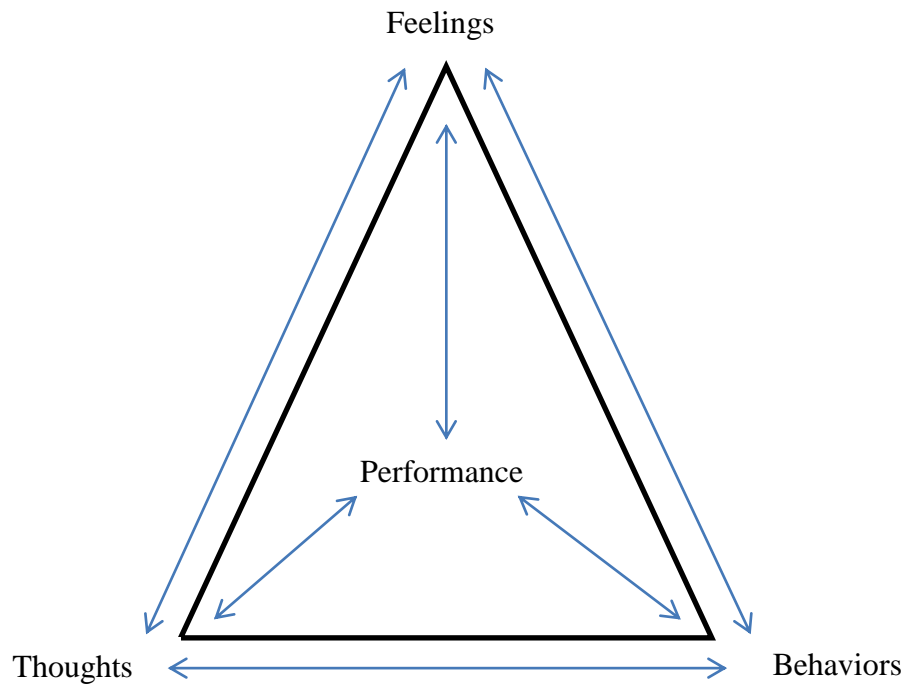


Figure 3. Performance Optimization Continuum



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CURRICULUM VITAE

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BIOGRAPHICAL

Date of Birth: 9/13/1989
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Business Address: University of Nevada, Las Vegas
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EDUCATION

Ph.D., Clinical Psychology, University of Nevada, Las Vegas (APA-Accredited) Expected 2018

M.A., Psychology, University of Nevada, Las Vegas Expected May 2016
Thesis: Concurrent mental health and sport performance enhancement in an athlete initiating behavioral intervention with no assessed pathology: A case examination supporting optimization.
Chair: Brad Donohue, Ph.D.

B.A., Psychology, California State University, Northridge June 2012
Graduated Summa Cum Laude

Secondary Vocational Education (3 year college), Pedagogue of Sport and Physical Exercise, Omsk State College of Olympic Reserves, Omsk, Russia June 2009
Thesis: The differences in body shapes among four different swimming styles.
Chair: Lyudmila Medvedeva, M.A.

PRACTICUM TRAINING

The Optimum Performance Program July 2015–Present
University of Nevada, Las Vegas Supervisor: Brad Donohue, Ph.D.
Cirque du Soleil 15 to 20 hours per week
Las Vegas, NV
National Circus School
Montreal, QC, Canada

- Establishing a mental and behavioral health clinic and developing components of a skill-based intervention program designed specifically for circus artists, coaches, and teachers.
- Providing group workshops of up to 28 participants for circus artists, coaches, and teachers, targeting skills relevant to optimization of relationships, communication, and thought management.
- Providing individual and group skill-based interventions for circus artists in in-person and teletherapy formats with a caseload of approximately 5-8 clients per week in an outpatient psychology department-based applied research clinic. Primary theoretical approaches utilized included CBT/FBT.
- Conducting consultation and networking with agency representatives as well as provision of individual assessment feedback to clients and summative feedback to agencies.
- Supervision consisted of weekly individual meetings with audiotape review.

Departmental Community Mental Health Clinic

University of Nevada, Las Vegas
Las Vegas, NV

Aug. 2014–Aug. 2015
Supervisor: Jason Holland, Ph.D. Aug.–May
Michelle Paul, Ph.D. May–Aug.
12 to 16 hours per week

- Long-term individual psychotherapy with a caseload of approximately 5-8 clients per week in an outpatient psychology department-sponsored mental health training clinic. Diagnoses included affective disorders, anxiety disorders, obsessive-compulsive disorders, trauma-related disorders, ADHD, intermittent explosive disorders, neurocognitive disorders, and adjustment disorders. Primary theoretical approaches utilized included CBT and FBT.
- Supervision consisted of weekly individual and group meetings with digital video review. Also attended weekly practicum seminars, which included didactic, group supervision, and case conference components.

Psychological Assessment & Testing Clinic

University of Nevada, Las Vegas
Las Vegas, NV

Aug. 2014–Aug. 2015
Supervisor: Andrew Freeman, Ph.D.

- Conducted psychodiagnostic assessments using a flexible battery with adults and children referred from the community in an outpatient psychology department-sponsored mental health training clinic.
- Further responsibilities included interviewing, scoring, interpretation, integrated report writing, differential diagnosis, and provision of feedback to clients.
- Comprehensive integrated assessment cases completed with a range of referral questions including learning disabilities, depressive disorders, anxiety disorders, bipolar disorder, ADHD, substance abuse, and oppositional defiant disorder.
- Supervision included weekly individual and group meetings with digital video review, reviewing cases, case conceptualization, joint determination of assessment battery and interpretation of results, report revisions, and discussion of feedback.

SUPPLEMENTAL PRACTICUM TRAINING

The Optimum Performance Program in Sports

University of Nevada, Las Vegas
Las Vegas, NV

June 2012–Present
Supervisor: Brad Donohue, Ph.D.
Up to 10 hours per week

- Assisting in development and refinement of a significant-other supported behavioral treatment for collegiate athletes with substance use disorders as part of a NIDA-funded RCT.
- Conducting manualized 12 session evidence-based treatment (Family Behavior Therapy) with Division I athletes and their supportive others, including family members, teammates, coaches, and peers, to decrease substance use & risk of HIV/STIs, and optimize mental health, sport performance, and relationships.
- Weekly individual and group supervision, as well as audiotape review for treatment adherence.
- Providing team workshops for UNLV student-athletes on various topics, including motivation, goal-setting, focus, communication, and cohesion.

Consultant

Cirque du Soleil
Las Vegas, NV

April 2014–Nov. 2014
Supervisor: Brad Donohue, Ph.D.
3 hours per week

- Provided mental strength and stability performance programming for Cirque du Soleil employees, including performers, technicians, and administrative staff.

RESEARCH

Family Research and Services

University of Nevada, Las Vegas
Las Vegas, NV

June 2012–Present
Advisor: Brad Donohue, Ph.D.

Study: Evaluation of Family Behavior Therapy in collegiate athletes (NIDA funded R01 grant, 1R01DA031828)

- As Program Coordinator, responsible for the immediate day-to-day oversight of a clinical randomized trial, focused on the development and controlled evaluation of Family Behavior Therapy (FBT) for substance abuse adapted for collegiate athletes.
- Supervising clinic management, data management, outcomes assessments, treatment adherence, IRB, participant incentives, quality assurance, data safety and monitoring, research meetings, program membership, and adherence to standardized administrative protocols.
- Developing and revising intervention components, clinic records, and standardized protocols with enhancement to be culturally sensitive to athletes, as well as developing promotional and recruitment materials.
- Preparing a manual for use of FBT with athletes, presenting findings at professional conferences, and writing manuscripts for publications.
- Supervising and mentoring a team of graduate students and undergraduate research assistants.
 - Sub-study: Controlled evaluation of a method of recruiting participants into treatment outcome research (Alcohol Beverage Medical Research funded; recruitment into R01 grant, 1R01DA031828)
 - Implementing semi-structured interviews with study participants, data collection, development of protocols, dissemination, and publications.
 - Sub-study (thesis): Concurrent mental health and sport performance enhancement in an athlete presenting with no deficits: A case for optimization.
 - Implemented FBT intervention w/ a collegiate athlete.

Study: Development of cost-effective performance programs for Cirque du Soleil & National Circus School (Cirque du Soleil and National Circus School funded)

- As Program Coordinator, responsible for the immediate day-to-day oversight of the project, focused on the development and controlled evaluation of a performance program for circus artists and coaches.
- Establishing and monitoring clinic management, data management, outcome assessments, IRB, recruitment and retention of participants, and organizing research meetings with the agencies.

Study: Alcohol prevention for freshman student-athletes (Alcohol Beverage Medical Research funded)

- Coordinated participant recruitment, participant pre- and post-intervention data collection, assisted in the development of the prevention intervention, and implemented alcohol prevention intervention with student-athletes.

Study: Concurrent drug abuse treatment and HIV prevention in child neglecting mothers, NIDA funded R01 grant (DA020548-01A1)

- Assisted in dissemination of results and management of IRB modifications.

Sport Psychology Research Lab

California State University, Northridge
Northridge, CA

April 2011–May 2012
Advisor: Mark Otten, Ph.D.

Study: Examination of “clutch” performance in athletes.

- Study examined performance under pressure, expertise, sport confidence, reinvestment, negative cognitive & somatic anxiety, positive anxiety, and perceived control.

- Assisted in study recruitment, administration of assessment measures, data entry, and dissemination of study results a professional conference.

Study: Archival review of pitching and “clutch” hitting in baseball.

- Assisted in data collection and entry.

GRANT INVOLVEMENT

Family Behavior Therapy for Collegiate Athletes (1R01DA031828)

Grant Coordinator & Clinician

Funding Agency: National Institutes on Drug Abuse. Principal Investigator: Brad Donohue, Ph.D.
\$1,998,000.

Development of Cost-Effective Performance Programs for Cirque du Soleil & National Circus School

Grant Coordinator and Clinician

Funding agencies: Cirque du Soleil and National Circus School. Principal Investigator: Brad Donohue, Ph.D.
\$30,000.

Great Plays: Alcohol Abuse Prevention

Grant Coordinator and Prevention Educator

Funding Agency: Alcohol Beverage Medical Research. Principal Investigator: Brad Donohue, Ph.D.
\$20,000.

Great Plays: Effect of Recruitment Strategies on Enrollment into Treatment Outcome Research

Clinician

Funding Agency: Alcohol Beverage Medical Research. Principal Investigator: Brad Donohue, Ph.D.
\$10,000.

Concurrent Drug Abuse Treatment and HIV Prevention in Child Neglecting Mothers (1R01DA020548)

Dissemination Team Member

Funding Agency: National Institutes on Drug Abuse. Principal Investigator: Brad Donohue, Ph.D.
\$1,350,000.

PUBLICATIONS AND PRESENTATIONS

Peer Reviewed Manuscripts Published

- 4) Donohue, B., Chow, G. M., Pitts, M., Loughran, T., Schubert, K. N., **Gavrilova, Y.**, & Allen, D. N. (2015). Piloting The Optimum Performance Program in Sports: A family-supported approach to concurrently enhancing mental health and sport performance in athletes. *Clinical Case Studies, 14*, 159-177.
- 3) Pitts, M., Donohue, B., Schubert, K. N., Chow, G. M., Loughran, T., & **Gavrilova, Y.** (2015). A systematic case examination of The Optimum Performance Program in Sports in a combat sport athlete. *Clinical Case Studies, 14*, 178-190.
- 2) Chow, G. M., Donohue, B., Pitts, M., Loughran, T., Schubert, K. N., **Gavrilova, Y.**, & Diaz, E. (2015). Results of a single case controlled study of The Optimum Performance Program in Sports in a collegiate athlete. *Clinical Case Studies, 14*, 191-209.

- 1) Donohue, B., Pitts, M., **Gavrilova, Y.**, Ayarza, A., & Cintron, K. (2013). A culturally sensitive approach to treating substance abuse in athletes using evidence-supported methods. *Journal of Clinical Sport Psychology*, 7(2), 98-119.

Manuscripts Submitted or In Progress

- 2) Donohue, B., Loughran, T., Pitts, M., **Gavrilova, Y.**, Chow, G. M., Soto-Nevarez, A., & Schubert, K. (2016). *Concurrent reduction of alcohol consumption and factors interfering with sport performance in collegiate athletes*. Manuscript submitted for publication.
- 1) Donohue, B., Plant, C. P., Dowd, A., Phillips, C., Loughran, T., **Gavrilova, Y.** (2015). *Controlled evaluation of a method of recruiting participants into treatment outcome research: Preliminary results in a sample of collegiate athletes*. Manuscript submitted for publication.

Conference Verbal Presentations

- Donohue, B., **Gavrilova, Y.**, Plant, C. & Galante, M. (October, 2016). *Managing the environment for adolescents evidenced to abuse drugs utilizing stimulus control strategies within the context of Family Behavior Therapy*. Mini workshop will be conducted at the annual convention of the Association of Behavioral and Cognitive Therapies, New York, NY.
- 6) **Gavrilova, Y.**, Phillips, C., & Galante, M. (2016, January). *An evidence-supported timeline functional analysis method of performance optimization*. Workshop conducted at the annual conference of the Center for Performance Psychology, National University's Sanford Education Center, Carlsbad, CA.
 - 5) **Gavrilova, Y.** & Phillips, C. (2015, February). *Pre-performance and post-performance mindset training in the context of therapy: A workshop aimed at establishing optimum mindset in performers*. Workshop conducted at the annual conference of the Center for Performance Psychology, National University's Sanford Education Center, Carlsbad, CA.
 - 4) **Gavrilova, Y.**, Donohue, B., Pitts, M., Loughran, T., Schubert, K., & Chow, G. & (2014, October). The Optimum Performance Program in Sports overview. In B. Donohue, M. Pitts, & K. Schubert (Chairs), *Development and initial examination of the Optimum Performance Program in Sports: Bridging the gap between mental health and sport performance*. Symposium conducted at the annual conference of the Association for Applied Sport Psychology, Las Vegas, NV.
 - 3) **Gavrilova, Y.** (2014, April). Factors contributing to underutilization of mental health services by student-athletes. In M. Pitts (Chair), *Process of developing a non-stigmatizing, positive environmental context for The Optimum Performance Program in Sports: An alternative to the traditional campus counseling approach to addressing mental health with implications for college students*. Symposium conducted at the annual convention of the Western Psychological Association, Portland, OR.
 - 2) **Gavrilova, Y.**, Gonzalez-Buena, A., Loughran T., Swartzman E., Tran, T., Bigler, L., Donohue, B. (2013, July). *Family Behavior Therapy for substance abuse and associated problems*. Presentation conducted at the international conference and exhibition of the Addiction Research & Therapy, Las Vegas, NV.
 - 1) **Gavrilova, Y.** & Perez, D. (2012, April). Measuring positive appraisal as an alternative to competitive state anxiety. In M. Otten (Chair), *Modeling clutch performance in sport: The keys to success revealed*. Symposium conducted at the annual convention of the Western Psychological Association, San Francisco, CA.

Conference Verbal Presentations Submitted

- Donohue, B., **Gavrilova, Y.**, Galante, M., Pitts, M., Plant, C. P. (October, 2016). *An evidence-based method of assessing and managing suicidal ideation*. Clinical Roundtable will be presented at the annual convention for the Association of Behavioral and Cognitive Therapies, New York, NY.
- Donohue, B., **Gavrilova, Y.**, Galante, M., Phillips, C., & Burnstein, B. (September, 2016). *Piloting The Optimum Performance Program in Circus: Exploration into an important domain of performance psychology*. Panel will be presented at the annual conference of the Association of Applied Sport Psychology, Pheonix, AZ.
- Donohue, B., Galante, M., **Gavrilova, Y.**, Phillips, C., Scott, J., & Frazier, G. (September, 2016). *The Semi-Structured Interviews for Sport and Ethnic Culture in mental health and sport performance programming: A rapid method of enhancing athletes' engagement*. Workshop will be conducted at the annual conference of the Association of Applied Sport Psychology, Pheonix, AZ.
- Donohue, B., **Gavrilova, Y.**, Galante, M., Phillips, C., & Scott, J. (September, 2016). *Incorporating performance-focused agendas into counseling sessions with athletes: An evidence-supported context to make therapy fun*. Workshop will be conducted at the annual conference of the Association of Applied Sport Psychology, Pheonix, AZ.
- Donohue, B., **Gavrilova, Y.**, Galante, M., Phillips, C., & Scott, J. (September, 2016). *Communication skills training methods and strategies to enhance athlete relationships within the context of an evidence-supported optimization program*. Workshop will be conducted at the annual conference of the Association of Applied Sport Psychology, Pheonix, AZ.

Other Verbal Presentations

- 7) Donohue, B., Light, A., & **Gavrilova, Y.** (2015, February). *Adapting performance psychology to fit the culture of Cirque du Soleil*. Presentation conducted at the Cirque du Soleil Summit, Las Vegas, NV.
- 6) Donohue, B., **Gavrilova, Y.** (2014, March). *An empirically-supported method of being culturally competent*. Presentation conducted for Cultural Competence Academy (CCA) at University of Nevada Las Vegas, Las Vegas, NV.
- 5) Donohue, B., **Gavrilova, Y.**, El Ansari, K. (2013, September). *Family Behavior Therapy for substance abuse and associated problems*. Presentation conducted for Osher Lifelong Learning Institute (OLLI), Las Vegas, NV.
- 4) Donohue, B., **Gavrilova, Y.**, Pitts, M. (2013, July). *Family Behavior Therapy for adults*. Two-day training conducted for mental health professionals at the Veterans Healthcare Administration of Southern Nevada, Las Vegas, NV.
- 3) Donohue, B. & **Gavrilova, Y.** (2012, December). *Family Behavior Therapy for substance abuse and associated problems*. Presentation conducted for the All About You Counseling and Support Services, Las Vegas, NV.
- 2) Donohue, B., **Gavrilova, Y.**, Loughran, T., Pitts, M. (2012, October). *Family Behavior Therapy: An evidence-based approach for adolescent substance abuse and associated problems*. Two-day training conducted for the State of Nevada Division of Child and Family Services, Las Vegas, NV.
- 1) Donohue, B., **Gavrilova, Y.**, Wrzeciona, K. (2012, September). *Reducing stress at home and work using communication skills, environmental skills & emotional regulation*. Presentation conducted for the Rodey Law Firm, Las Vegas, NV.

Conference Poster Presentations

- 13) Kenny, M. C., Lopez-Griman, A. M., Donohue, B., Plant, C. P., & **Gavrilova, Y.** (2015, November). *Development and initial evaluation of an innovative online training program to assist professionals in reporting child maltreatment.* Poster presented at the annual convention of the Association for Behavioral and Cognitive Therapies, Chicago, IL.
- 12) Loughran, T., Soto-Nevarez, A., Pitts, M., Schubert, K., **Gavrilova, Y.**, Chow, G., & Donohue, B. (2015, November). *Evaluation of a goal-oriented alcohol prevention program in student-athletes.* Poster presented at the annual convention of the Association for Behavioral and Cognitive Therapies, Chicago, IL.
- 11) **Gavrilova, Y.**, Dowd, A., Loughran, T., Pascua, A., Mitchell, R., & Donohue, B. (2015, April). *The effect of engagement strategy on client's disclosure.* Poster presented at the annual convention of the Western Psychological Association, Las Vegas, NV.
- 10) Garner, C., **Gavrilova, Y.**, Phillips, C., Pascua, A., Gillis, D., Donohue, B. (2015, April). *A systematic method of recruitment of collegiate athletes.* Poster presented at the annual convention of the Western Psychological Association, Las Vegas, NV.
- 9) Dowd, A., Torres, A., Pascua, A., Leon, D., **Gavrilova, Y.**, & Donohue, B. (2015, April). *Examination of two engagement strategies on athlete RCT consent.* Poster presented at the annual convention of the Western Psychological Association, Las Vegas, NV.
- 8) Loughran, T., Chow, G., Pitts, M., Schubert, K., **Gavrilova, Y.**, & Donohue, B. (2014, October). *Frequency of alcohol use as a predictor of mental health symptoms in collegiate athletes.* Poster presented at the annual conference of the Association for Applied Sport Psychology, Las Vegas, NV.
- 7) Chow, G. M., Donohue, B., Diaz, E., Pitts, M., Loughran, T., Schubert, K. N, & **Gavrilova, Y.** (2014, October). *A sport-specific Family Behavior Therapy for athletes: A multiple-baseline case study of a collegiate cheer and dance athlete.* Poster presented at the annual conference of the Association for Applied Sport Psychology, Las Vegas, NV.
- 6) Swarzman E., Loughran, T., Dowd, A., Tran, T., Torres, A., Gonzalez-Bueno, A., **Gavrilova, Y.**, Chow, G., & Donohue, B. (2014, October). *Development and initial evaluation of a dynamic performance goal intervention.* Poster presented at the annual conference of the Association for Applied Sport Psychology, Las Vegas, NV.
- 5) **Gavrilova, Y.**, Armenta, S., Palou, Q., Torres, A., Schubert, K. N., Pitts, M., & Donohue, B. (2014, April). *Development and dissemination of administrative procedures of an evidence-supported clinic.* Poster presented at the annual convention of the Western Psychological Association, Portland, OR.
- 4) Pitts, M., El Ansari, K., **Gavrilova, Y.**, Schubert, K., & Donohue, B. (2014, April). *Are client preferences for intervention components consistent with treatment dosage? Results from an intervention outcome study in a sample of college athletes.* Poster presented at the annual convention of the Western Psychological Association, Portland, OR.
- 3) Diaz, E., Kong, P., Swarzman, E., Holler, A., Gonzalez-Bueno, A., **Gavrilova, Y.**, Loughran, T., Wrzeciona, K., Pitts, M., Murrieta, V., Dunn, R., Chow, G., Kelleher, L., & Donohue, B. (2013, October). *Factors that interfere with sport performance and alcohol use among collegiate athletes.* Poster presented at the annual conference of the Association of Applied Sports Psychology, New Orleans, LA.
- 2) Bigler, L., Gonzalez-Buena, A., Loughran, T., Swarzman, E., **Gavrilova, Y.**, Chow, G. & Donohue, B. (2013, July). *Family Behavioral Therapy's influence on alcohol use in collegiate athletes'*

performance. Poster presented at the international conference and exhibition of the Addiction Research & Therapy, Las Vegas, NV.

- 1) **Gavrilova, Y.** (2011, December). *Performance under competitive pressure in female volleyball players*. Poster presented at the Psi Chi Competition, California State University Northridge, Northridge, CA.

Conference Poster Presentations Submitted

Donohue, B., Pitts, M., **Gavrilova, Y.**, Plant, C. P., Galante, M., Millwood, S. (October, 2016). *Preliminary development of a brief intervention to prevent alcohol misuse and enhance sport performance in collegiate athletes*. Poster will be presented at the annual convention for the Association of Behavioral and Cognitive Therapies, New York, NY.

Plant, C. P., Galante, M., **Gavrilova, Y.**, Andrewjeski, K., Millwood, S., & Donohue, B. (October, 2016). *Examination of the influence of child neglect type and court disposition status on baseline assessment of child maltreatment potential in mothers referred to treatment by Child Protective Services*. Poster will be presented at the annual convention for the Association of Behavioral and Cognitive Therapies, New York, NY.

Plant, C. P., **Gavrilova, Y.**, Pitts, M., Galante, M., Andrewjeski, K., & Donohue, B. (October, 2016). *Controlled evaluation of a method of recruiting participants into treatment outcome research*. Poster will be presented at the annual convention for the Association of Behavioral and Cognitive Therapies, New York, NY.

Plant, C. P., Pitts, M., **Gavrilova, Y.**, Galante, M., Andrewjeski, K., & Donohue, B. (October, 2016). *Family supported dynamic goal and contingency management intervention components within the context of evidence-supported treatment for mothers referred by Child Protective Services*. Poster will be presented at the annual convention for the Association of Behavioral and Cognitive Therapies, New York, NY.

Galante, M., **Gavrilova, Y.**, Phillips, C., Corral, A., Corey, A., Burnstein, B. & Donohue, B. (September, 2016). *TOPP performance: Anxiety and problem-solving skills in circus artists*. Poster will be presented at the annual conference of the Association of Applied Sport Psychology, Phoenix, AZ.

EDITORIAL EXPERIENCE

Editorial Assistant

Journal of Child and Adolescent Substance Abuse (JCASA)

April 2016–Present

Conference Abstract Reviewer

Association for Applied Sport Psychology (AASP)

March 2016

TEACHING & TRAINING EXPERIENCE

Family Behavior Therapy (FBT) for Adolescents Training

Santa Barbara County Department of Behavioral Wellness
Buellton, CA

March 2016
Supervisor: Brad Donohue, Ph.D.

- Assisted Dr. Brad Donohue in conducting a comprehensive two-day training workshop in FBT for adolescents, which is an evidence-based behavioral treatment for substance abuse and its associated behavior problems, developed with support from the National Institute on Drug Abuse and National Institute of Mental Health.
- Provided modeling of therapeutic skills, oversaw role-playing exercises, and provided corrective feedback to clinicians.

Guest Lecturer

University of Nevada, Las Vegas
Las Vegas, NV

Spring 2014, Fall 2015, Spring 2016
Supervisor: Brad Donohue, Ph.D.

- Taught live undergraduate classrooms of Child Behavior Disorders course.
 - Lecture on Anxiety
 - Lecture on Depression
- Taught live graduate classroom of Child Intervention course.
 - Lecture on Depression

Teacher Assistant

California State University, Northridge
Northridge, CA

Fall 2011
Supervisor: Frederick Elias, Ph.D.

- Assisted the professor and students in live classroom of Personality Psychology course in practicing and role-playing therapeutic skills based on Marriage and Family Therapy (MFT), Person-Centered Therapy (PCT), Rational Emotive Behavior Therapy (REBT), Gestalt Approach, and other therapies.
- Graded papers and exams.
- Evaluated the therapeutic style and assuring adherence to a particular therapy paradigm chosen by the students for their final project (therapy session with a client & analysis of the dialogue).
- Assisted students with questions regarding exams, paper formatting, final project session recording, transcribing role-plays, and analyzing therapy sessions.

LEADERSHIP AND SERVICE

Registered Student Organization President

Family Research & Services, University of Nevada, Las Vegas
Las Vegas, NV

Jan. 2016–Present

- Family Research & Services (FRS) is a non-profit applied research laboratory that hosts a number of cutting-edge research projects that are supported by the National Institutes of Health and other federal agencies.
- Responsibilities include day-to-day oversight of ongoing projects, outreach efforts, & charity events.

The Blues Project Peer Educator

Counseling Center, California State University, Northridge
Northridge, CA

Spring 2012
Supervisors: Marshal Bloom, Ph.D.
Carrie Saetermoe, Ph.D.

- Peer organization dedicated to raising awareness about depression and suicide.
- Completed weekly 3-hour trainings held by the director & coordinators of project.
- Provided six 1-hour outreach educational presentations to the student population and professional organizations of Los Angeles County.
- Assisted in organization and hosting of an outreach event in honor of Depression Awareness Week that included various activities aimed to provide resources and reduce stigma.

Peer Psychology Tutor

California State University, Northridge
Northridge, CA

Summer 2010-Fall 2011

- Tutored and prepared peer-students for examinations and assisted with writing and theoretical assignments for *Research Methods, Personality Psychology, Social Psychology, Cognitive Psychology, and Psychology of Motivation.*

PROFESSIONAL AFFILIATIONS

Association for Applied Sport Psychology (AASP)	2013–Present
Association for Behavioral and Cognitive Therapies (ABCT)	2015–Present
Nevada Psychological Association (NPA)	2014–Present
Western Psychological Association (WPA)	2012–Present
Center for Performance Psychology	2014–Present
Association for Psychological Science (ASP)	2013–2014
OMICS Group (Addictions Research and Therapy)	2013–2014

OTHER RELEVANT WORK EXPERIENCE

Applied Behavior Analysis (ABA) Therapist Summer 2012
 Lovaas Center for Autism Supervisor: Mansi Rajadhyaksha, M.S., BCaBA
 Las Vegas, NV

- Conducted in-home one-on-one ABA interventions (i.e., Pivotal Response Training (PRT); Discrete Trial Training (DTT); Picture Exchange Communication System (PECS)) with children diagnosed with Autism Spectrum Disorders as well as collected session data (e.g., ABCs of behaviors).
- Participated in monthly 2-day consultations with supervisor and direct interventionists team focused on client's progress, including goal acquisition, transfer of mastered goals to generalization protocols, goal-setting, and treatment planning.

Behavior Therapist Spring 2012
 Foothill Child Development Services Inc. Supervisors: Adriana Gracias, BCBA
 Tujunga, CA Karen Moreno, M.A.

- Provided in-home ABA interventions (PRT, DDT, PECS) with developmentally disabled children (physical handicaps, learning disorders, and pervasive developmental disorders), provided parent training to promote skill generalization, prepared sessions materials (e.g., label/categorical/function cards, PECS cards, social stories), collected and entered data, and prepared summary progress reports.

Translator and Oral Interpreter 2010
 Polymer Global Holdings Inc.
 Woodland Hills, CA

- Traveled between Los Angeles, USA, Beijing, China and Moscow, Russia to assist the company's executive director in business meetings. Translated documents from English to Russian (and vice versa) and interpreted between Russian and English in business meetings.

OTHER RELEVANT TRAINING

Interprofessional Education Day Feb. 2015, Feb. 2016
 University of Nevada, Las Vegas Supervisor: Michelle Paul, Ph.D.
 Las Vegas, NV

- Eight-hour event aimed at increasing awareness of interprofessional education, practice concepts, roles, responsibilities, and myths for the participating professions, as well as initiating an understanding of how interprofessional teams should function to better serve patients.

Integrated Behavioral Health in Primary Care Course Fall 2015
 University of Nevada, Las Vegas, NV Supervisor: Michelle Paul, Ph.D.
 Las Vegas, NV

- Course developed based on recommendations from Interprofessional Education Collaborative for clinical professions who plan on delivering integrated behavioral health services and who serve populations often presenting with complex needs in physical health, mental health, and substance use.
- Areas of training included assessment, intervention, and consultation skills; applying these strategies in the workplace; and working together within interdisciplinary teams in developing treatment plans and establishing appropriate referrals.

The Current Procedural Terminology (CPT) System as a Model for Professional Psychological Services

May 2015, 8 hours

Antonio E. Puente, Ph.D., hosted by Nevada Psychological Association (NPA)
Las Vegas, NV

- Comprehensive one-day training to address the CPT system, a scientifically-based model for coding, billing, and documenting professional psychological services, including psychotherapy and testing, with an emphasis on understanding the health policy in the United States. Projections for the future, including documentation and performance measures, were discussed.
- CPT is vetted by all (approximately 130) healthcare organizations and has the approval of all major insurance carriers including Medicare and Blue Cross Blue Shield.

Adverse & Serious Adverse Events, Child Abuse Reporting, Suicidal Ideation, & Substance Withdrawal Training

2013–2015, 6 hours

University of Nevada, Las Vegas
Las Vegas, NV

Supervisor: Bradley Donohue, Ph.D.

- Comprehensive trainings in the context of an ongoing NIDA trial on assessment and appropriate reporting of: adverse events (AEs) & serious adverse events (SAEs) that may arise in working with athletes, suspected child maltreatment, suicidal ideation, and substance withdrawal symptoms.

Dialectical Behavior Therapy (DBT; Parts I and II)

Spring 2015, 48 hours

Alan Fruzzetti, Ph.D., hosted by Nevada Psychological Association (NPA)
Las Vegas, NV

- Comprehensive 6-day training to address theory and structure of DBT treatment, treatment targets and strategies, and skills training & skill coaching through role-playing exercises.
- DBT is a comprehensive evidence-based, cognitive-behavioral treatment for complex, difficult to treat mental disorders. This approach works towards helping people increase their emotional and cognitive regulation by learning about the triggers that lead to reactive states and helping to assess which coping skills to apply in the sequence of events, thoughts, feelings, and behaviors to help avoid undesired reactions. DBT assumes that people are doing the best they can but are either lacking the skills or influenced by positive or negative reinforcement that interfere with their ability to function appropriately.
- DBT combines standard cognitive-behavioral techniques for emotion regulation and reality-testing with concepts of distress tolerance, acceptance, and mindful awareness largely derived from Buddhist meditative practice.

Family Behavior Therapy (FBT) for Adolescents

July 2013, 30 hours

Bradley Donohue, Ph.D., University of Nevada, Las Vegas
Las Vegas, NV

- Comprehensive 6-week training course in FBT for adolescents, one of the most scientifically supported behavioral treatments available for substance abuse and its associated behavior problems (e.g., depression, unemployment, conduct disorders, family discord, child maltreatment), developed with support from the National Institute on Drug Abuse and National Institute of Mental Health.
- The FBT approach to substance abuse is still one of the only comprehensive scientifically-based approaches to demonstrate improved outcomes in both adolescent and adult substance abuse. This approach is currently listed in SAMHSA's National Registry of Evidence-based Programs and Practices.
- FBT involves engagement of significant others as change agents in bringing about a substance-free lifestyle. Intervention components include Orientation, Session Agenda, Behavioral Goals &

Rewards, Consequence Review, Communication Skills Training (Positive Request & Reciprocity Awareness), Treatment Planning, Environmental Control, Self-Control, Job-Getting Skills Training.

Responsible Conduct of Research (RCR)

October 2012, 8 hours

Office of Research and Integrity, Division of Research and Graduate Studies
University of Nevada, Las Vegas
Las Vegas, NV

- Live training on professional development and various ethical issues in conducting research in accordance with federal requirements, including General Ethical Responsibilities in Research, Mentor/ Trainee Responsibilities, Research Misconduct, Collaborative Research, Peer Review, Publication Practices and Responsible Authorship, Conflicts of Interest and Commitment, and Acquisition, Management, Sharing, and Ownership of Data.

Family Behavior Therapy (FBT) for Adults

Aug. 2012, 16 hours

Bradley Donohue, Ph.D., Veterans Healthcare Administration Southern Nevada
Las Vegas, NV

- Comprehensive 2-day training on the use of an evidence-supported behavioral intervention for substance use disorders in adults, developed with support of the National Institute on Drug Abuse and National Institute of Mental Health. FBT involves engagement of significant others as change agents in bringing about a substance-free lifestyle.
- Intervention components include Orientation, Session Agenda, Behavioral Goals & Rewards, Communication Skills Training (Positive Request & Reciprocity Awareness), Treatment Planning, Environmental Control, Self-Control, Job-Getting Skills Training, and Financial Management Skills

Community Reinforcement Approach (CRA)

Aug. 2012, 16 hours

Raymond Anderson, Ph.D., NIDA Clinical Trials Network-Southern Node, University of New Mexico
Albuquerque, NM

- Comprehensive 2-day training on an evidence-based substance use behavioral intervention to replace environmental contingencies supporting substance use with prosocial activities and behaviors for recovery. Reviewed program efficacy, treatment procedures, functional analysis, prosocial behavior, and substance use goal planning.

Community Reinforcement & Family Training (CRAFT)

Aug. 2012, 16 hours

Raymond Anderson, Ph.D., NIDA Clinical Trials Network-Southern Node, University of New Mexico
Albuquerque, NM

- Comprehensive 2-day training on CRAFT, a unilateral family treatment approach developed with support from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) and National Institute on Drug Dependence (NIDA) as a way of helping concerned significant others (CSOs) of alcohol/drug users who refuse to seek treatment. CRAFT utilizes a variety of interventions based on functional assessment (i.e., use of positive reinforcement, communication skills, and natural consequences).

ABA Therapist Development Training

Feb.–March 2012, >50 hours

Emilia Broberg, BCBA and George Dancel, BCaBA, Foothill Child Development Services, Inc.,
Tujunga, CA

- 4-hr trainings held twice per week involved ABA instruction, video examples, role-plays, and quizzes. Topics included ABA intervention components (e.g.,PRT, DDT, PECS, reinforcement, extinction, shaping, task analysis, chaining, generalization), ethical responsibilities, and therapist-family dynamics.

Autism Training Solutions (ATS) Training

April 2012, 24 hours

Online education company dedicated to training professionals within the field of autism and related behavioral disabilities. Each module included videos and mastery quizzes. Topics covered:

- Behavior Interventions (e.g., reinforcement, ABCs of behavior, antecedent interventions: discriminative stimulus, stimulus control, errorless teaching; instructional control, motivating operations (MOs); consequence interventions: extinction, differential reinforcement, time out, response cost).
- Teaching Procedures (e.g., prompting, shaping, chaining, discrimination training, verbal behavior training, DTT & PRT: task analysis, maintenance, generalization; naturalistic teaching strategies (NaTS)).
- Assessment & Progress Evaluation (e.g., functions of behavior, analyzing and recording behavior, graphing and progress evaluation).
- Autism Spectrum Disorders (ASD) (e.g., Autism & Asperger's, diagnostic criteria, available treatments).
- Ethics & Client Rights (e.g., HIPPA and confidentiality, guidelines for responsible conduct, role of punishment).

Behavioral Instructor Training

Feb. 2012, 24 hours

Mariela Feldman, M.S., BCBA and Theresa Demus, M.S., BCaBA, A Change in Trajectory (ACT)

Van Nuys, CA

- Comprehensive 3-day training covered major concepts of ASD, Developmental Milestones, Parenting Styles, Social/Play Skills, ABA, Antecedent/Consequence Strategies, Data Collection System, DTT, PRT, Verbal Behavior (VB), and Functions of Behavior. A proficiency exam was taken upon completion of training and passed with a score of 100%.

COLLOQUIA ATTENDED

Grant, J., Psy.D. (2016, February). *Time-limited Psychodynamic Psychotherapy*. UNLV.

Kithas, J., M.D. (2015, April). *Commonly Prescribed Psychiatric Medications*. UNLV

Culbert, K. Ph.D. (2015, March). *Illuminating Sex Differences and Developmental Changes in Risk for Eating Disorders: The Role of Gonadal Hormones*. UNLV.

Devore, T., Ph.D. - a series of presentations on sexuality: *Gender and Intersex* (2015, February); *Sex Outside the Mainstream* (2014, December); *Managing Sexual Attraction in the Therapy Room* (2014, October). UNLV.

Lefforge, N., Ph.D. (2015, February). *A Brief Introduction to Projective Assessment*. UNLV.

Heavey, C., Ph.D. (2015, September). *A Brief Introduction to Couples Counseling*. UNLV.

Wood, S. (2013, February). *Mental Skills & Toughness Training for the 21st Century Athlete*. UNLV.

Pritchard, L., Ph.D. (2012, November). *Substance Dependence & Withdrawal: Focus on Anabolic Androgenic Steroids*. UNLV.

Marzell, M. Ph.D. (2012, September). *Reducing High-Risk College Drinking: Examining the Consumption of Alcoholic Energy Drink Cocktail Use among College Students*. UNLV.

Filho, E., Ph.D. (2012, September). *Expert Coaching, Expert Athlete, and Perceived Exertion. Applied and Teaching Agendas: An Overview*. UNLV.

Chow, G. M., Ph.D. (2012, September). *Social Influence in Sport*. UNLV.

AWARDS AND SCHOLARSHIPS

2nd place (\$100), Poster, Graduate & Professional Student Association, UNLV	2016
Travel Awards (>\$1000), Graduate & Professional Student Association, UNLV	2013-2016
2nd place (\$100), Poster, Nevada Psychological Association Conference	2015
Graduate Funds Access Award (\$2000), UNLV	2014-2015
Assessment Mini-Grant (\$1000), Office of Academic Assessment, UNLV	2014

Outstanding New Student Organization of the Year	2014
Outstanding New Program	2013
Travel Award (\$300), California State University Northridge	2012
3rd place, Advanced Research Poster, Psi Chi Chapter, CSUN	2011
Omsk State College of Olympic Reserves Honors List	2006–2009

Other Honors

5 Division I University Swimming Records, California State University Northridge	2010–Present
2010 Big West Conference Champion in 100 and 200 yards Butterfly	2010
Russian National Champion in Swimming	2007
Governor Letter of Appreciation for Athletic Accomplishments, Omsk	2006–2007
Member of the Russian National Swimming Team	2006–2007

SKILLS

Fluent in Russian and English
 Proficient on Adobe Photoshop
 Skilled photographer and graphic designer

REFERENCES

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