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A program evaluation of ZGiRLS: The role of cognitive emotion regulation in predicting mental health outcomes in adolescent girls

Julie Vieselmeyer
Seattle Pacific University

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A program evaluation of ZGiRLS: The role of cognitive emotion regulation in predicting
mental health outcomes in adolescent girls

Julie Vieselmeyer

A dissertation proposal submitted in partial fulfillment

of the requirements for the degree of

Doctor of Philosophy

in

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Approved by:

Amy Mezulis, Ph.D.
Associate Professor of Clinical Psychology
Dissertation Chair

Lynette Bikos, Ph.D.
Professor of Clinical Psychology
Committee Member

Elizabeth Boyer, Ph.D.
Counseling and Sport Psychologist
Committee Member

Reviewed by:

Amy Mezulis, Ph.D.
Chair, Clinical Psychology

Katy Tangenberg, Ph.D.
Dean, School of Psychology,
Family & Community

Dedication

To the clients who have entrusted and will entrust me with their innermost hopes, goals, and dreams. I am so blessed to share in your journey.

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Julie Vieselmeyer

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Abstract

This study investigated the impact of ZGiRLS, a sport-based youth development program (YDP) that seeks to empower adolescent girls by teaching psychological skills. Sport-based YDPs have shown great potential for promoting healthy psychological development (Anderson-Butcher et al., 2013), and may even serve a preventative function by providing an effective setting for developing positive traits, attitudes, and skills (Weissberg, Kumpfer, & Seligman, 2003). The purpose of this study was to conduct a program evaluation to explore the effectiveness of ZGiRLS. Four specific aims of the study were to examine (a) a change in psychological skills (i.e., self-talk and goal setting), (b) a change in cognitive emotion regulation, (c) a change in negative and positive mental health outcomes (i.e., depression, anxiety, self-esteem, resilience), and (d) cognitive emotion regulation as a mediator in the relationship between psychological skills and mental health outcomes.

Participants were 107 adolescent girls (*Mean age* = 12.35; *SD* = 1.41), enrolled in an 8-session curriculum program. Utilizing a pre- and post-test design, ZGiRLS participants responded to the following questionnaires: Test of Performance Strategies, Athletic Coping Skills Inventory, Cognitive Emotion Regulation Questionnaire, Revised Child Anxiety and Depression Scale, Rosenberg Self-Esteem Scale, and Connor-Davidson Resilience Scale.

The mediated model was evaluated with path analysis based on maximum likelihood estimation with SPSS Amos 25. Bootstrapped results of indirect, direct, and total effects were obtained. Results from the respecified model, ($\chi^2 = 99.84$, $df = 9$, $p = <.001$), indicate that self-talk predicted cognitive emotion regulation, anxiety, depression, and resilience. Goal setting did

not predict cognitive emotion regulation or mental health outcomes. Furthermore, psychological skills did not predict negative or positive mental health outcomes indirectly through cognitive emotion regulation, which suggests that another mechanism may account for these relationships. Findings suggest that the ZGiRLS curriculum program was successful in teaching psychological skills and enhancing protective factors in adolescent girls and thus, this approach may be utilized to cultivate other positive traits. Finally, findings contribute to the literature on sport-based YDPs, and offer key implications for program design, curriculum development, and implementation.

CHAPTER I

Introduction and Literature Review

Purpose

Positive youth development programs using a sport-based approach have shown great potential for promoting healthy psychological and physical development (Anderson-Butcher et al., 2013; Sifers & Shea, 2013). ZGiRLS is a sport-based youth development program (YDP) using psychological skills training (PST) to decrease negative and increase positive mental health outcomes in adolescents. Research shows that such programs may serve a preventative function as well as provide a supportive and effective setting for developing positive traits, attitudes, and skills (Weissberg, Kumpfer, & Seligman, 2003).

Several studies have shown that adolescence is a time when mental health symptoms emerge and thereby pose a risk for later mental health problems. Specifically, being adolescent and female has unique challenges including an increased vulnerability to symptoms of anxiety and depression (Cicchetti & Rogosch, 2002; Rudolph, 2002). Despite the challenges of being a teenage girl, many possess the traits of resilience and high self-esteem (Baumeister, Campbell, Kreuger, & Vohs, 2003; Campbell-Sills, Forde, & Stein, 2009; Connor & Davidson, 2003). The purpose of ZGiRLS is to buffer negative mental health outcomes such as depression and anxiety and bolster protective mental health outcomes like self-esteem and resilience.

ZGiRLS aims to achieve these outcomes via enhancing girls' adaptive cognitive emotion regulation, which is hypothesized to be the mechanism through which the program may enhance protective traits and reduce mental health symptoms. Previous research has shown a significant negative relationship between cognitive emotion regulation and symptoms of anxiety and depression as well as positive associations between cognitive emotion regulation and self-

worth and one's ability to cope with adversity (Garnefski & Kraaij, 2007; Gross & John, 2003; Hyde, Mezulis, & Abramson, 2008). Thus, promoting cognitive emotion regulation may improve self-esteem and resilience and reduce depression and anxiety. The ZGiRLS curriculum endeavors to increase cognitive emotion regulation through the development of psychological skills (e.g., self-talk and goal setting) and by using sport as a medium to engage participants.

The purpose of this study was to conduct a program evaluation of ZGiRLS. Specifically, it was hypothesized that through participation in ZGiRLS, there would be an increase in the use of psychological skills taught through the ZGiRLS curriculum. In turn, it was hypothesized that the increase in skills would predict increases in cognitive emotion regulation and thus predict fewer symptoms of depression and anxiety, and greater self-esteem and resilience, in adolescent girls. The protocol for this study was similar to the methods used to evaluate several other sport-based YDPs and will be used to further strengthen the effectiveness of ZGiRLS as a model of such programs (DeBate & Thompson, 2005; Iwasaki & Fry, 2013; Martin et al., 2009; Tessier et al., 2013). Implications for program design, future curriculum development, implementation, and the effectiveness of sport-based youth development programs will be discussed.

Adolescent Development: Negative and Positive Mental Health Outcomes

Adolescence is a key developmental period for biological, psychological, and social changes. Numerous processes determine whether adolescence is a time of “stress and storm” or adaptation to normal developmental tasks (Cicchetti & Rogosch, 2002; Hall, 1904). Both risk and protective factors interplay to determine whether individuals successfully navigate this time or experience negative mental health symptoms and face risk for subsequent adult disorders (Cicchetti & Toth, 1998). Gender is a significant risk factor for certain mental health problems. Girls may experience a unique interplay of factors including but not limited to hormonal

changes, emotional reactivity, cognitive style, and negative life events that may increase vulnerability to certain negative mental outcomes such as depression and anxiety (Rudolph, 2002).

Depression. Depression may be defined as a pervasive sad or irritable mood or loss of pleasure accompanied by several other negative changes in cognitions, emotions, or physiological changes that cause clinically significant distress or impairment in at least one domain of functioning (American Psychiatric Association, 2013). Researchers have suggested that even subclinical symptoms of depression have negative ramifications such that adolescents may experience greater obstacles in normal developmental tasks, including peer and family relationships and subsequently, face heightened vulnerability for adult depression, loneliness, and other mental health problems (Allen, Chango, Szvedo, & Schad, 2014; Lewis & Rudolph, 2014; Naicker, Galambos, Zeng, Senthilselvan, & Colman, 2013; Pine, Cohen, Cohen, & Brook, 1999). In 2014, the National Institute of Mental Health (NIMH) estimated that 2.8 million adolescents had a major depressive episode in the past year, which equates to 11.4% of the U.S. population aged 12-17. Gender differences in depression emerge in adolescence, with adult prevalence indicating that women are twice as likely as men to be depressed (Hankin, Mermelstein, & Roesch, 2007). Similarly, several studies have shown that after the onset of puberty, depression in girls nearly doubles, which far exceeds the rate of depressive symptomology in boys (Essau, Lewinsohn, Seeley, & Sasagawa, 2010; Hyde et al., 2008). Some reports have shown that 40 to 65% of adolescents may experience subclinical symptoms of depression (Achenbach, 1991; Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Petersen et al., 1993). While symptoms may not warrant diagnoses, the long-term sequelae of subclinical depressive symptoms may include lower maternal relationship quality,

less positive interactions with romantic partners, adult loneliness, poorer perceived health, higher healthcare utilization, work impairment, migraine headaches, heavy drinking, high stress, low social support, academic problems, and increased risk for adult depression (Allen et al., 2014; Keenan-Miller, Hammen, & Brennan, 2007; Naicker et al., 2013).

Anxiety. Research indicates that symptoms of anxiety may also manifest during adolescence. Anxiety, defined as excessive, uncontrollable worry, is characterized by cognitive distress, physical symptoms, and behavioral disturbance such as avoidance, that cause clinically significant distress and impairment. Symptoms may manifest in a wide variety of anxiety disorders including generalized anxiety disorder, panic disorder, agoraphobia, social phobia, separation anxiety disorder, and posttraumatic stress disorder. Beesdo, Knappe, and Pine (2009) suggest anxiety is one of the earliest forms of psychopathology to appear in childhood or adolescence. The threshold for diagnosing childhood anxiety disorders is very low (only one additional symptom required for diagnosis), thus making identification of subclinical anxiety a challenge. Research does suggest that early onset and the presence of one anxiety disorder predisposes individuals to additional, co-morbid anxiety disorders in adulthood as well as an increase in lifetime prevalence and chronic symptoms of anxiety. Additionally, developing an anxiety disorder increases risk for symptoms of depression and predicts substance use. Merikangas and colleagues (2010) in their national survey estimated that 25.1% of adolescents, ages 13-18, met criteria for an anxiety disorder. Furthermore, results show that girls tend to be more anxious, in as much as 30.1% of adolescent girls compared to 20.3% of boys (Hyde et al., 2008; Merikangas et al., 2010). Some researchers suggest that as much as 70% of children “worry every now and then” making the diagnostic distinction between clinical and subclinical symptoms a challenging and subjective process (Muris, Meesters, Merkelbach, Sermon, &

Zwakhaleh, 1998). Weems (2008) suggests that anxiety is a normal part of development which makes tracking fluctuations in severity or impairment across time key to diagnosis. Worry untreated can lead to avoidance, greater anxiety, and subsequent co-morbid mental health problems (Storch & McKay, 2013).

Self-esteem. Although girls may be at greater risk for developing certain mental health symptoms, protective factors such as self-esteem and resilience may increase the likelihood of positive adaptation for future developmental tasks. Self-esteem refers to a person's global beliefs or subjective evaluations of self-worth (Ciarocchi, Heaven, & Davies, 2007; Rosenberg, Schooler, & Schubach, 1989; Steiger, Allemand, Robins, & Fend, 2014). High self-esteem is characterized by having a generally positive view of self, qualities, abilities, and accomplishments. In contrast, low self-esteem reflects negative self-evaluations. Self-report measures can be used to indicate a person's self-esteem. While self-esteem reflects how a person perceives themselves and not necessarily reality, these beliefs about one's self do shape actions. Therefore, self-esteem has been implicated in consequences ranging from school performance, relationships with peers and significant others, job performance, health behaviors, and mental health.

In many contexts the positive benefits of high self-esteem are mixed, although the relationship between self-esteem and happiness is consistently strong (Baumeister et al., 2003). Deiner and Deiner (1995) and Lyubormirsky and Lepper (1999), in their large scale studies on self-esteem and happiness, reported high correlations, $r = .47$ and $r = .58$, respectively. Notably, Lyubormirsky and Lepper (1999) found that self-esteem was more closely related to hopefulness, optimism, and sense of mastery, whereas happiness was related to health, energy level, loneliness, mood, and life purpose. Investigating the relationship between self-esteem and

mental health outcomes is corollary to these findings. Baumeister et al., (2003) in their literature review found that people low in self-esteem experienced more depressed mood than those high in self-esteem. Additionally, the buffer hypothesis suggests that low self-esteem is correlated with stress vulnerability, and similarly, anxiety. Individuals' appraisals (specifically, those that focused on self-blame) mediated the relationship between low self-esteem and depression, further exacerbating the effects of negative self-evaluation. While findings from self-report data on self-esteem are correlational, results suggest that self-esteem has important implications for mental health outcomes in adolescence. Moreover, Steiger and colleagues (2014) found that low self-esteem in adolescence was related to depression two decades later. Furthermore, high self-esteem in adulthood was related to better job performance, academic achievement, and romantic relationships, whereas low esteem was related to poor physical and mental health, delinquency, lower economic status, substance use, and even mortality.

Kort-Butler and Hageman (2011) suggest that self-esteem plummets early in puberty and then recovers in later adolescence. Extracurricular activities, including both sport and non-sport activities, that provide adolescents with opportunities for self-assessment, exploration of identity, skill building, positive experiences, and support may promote self-esteem (Adachi & Willoughby, 2014; Kort-Butler & Hageman, 2011). Because self-esteem appears to be malleable, especially during adolescent years, interventions targeting low self-esteem may be effective and have significant implications during adolescence as well as decades later (Steiger et al., 2014).

Resilience. Resilience is the capacity for positive adaptation when challenges or adversity occur (Wright, Masten, & Narayan, 2013). Also conceptualized as stress coping ability, resilience may serve as a protective factor or as a preventative function against negative

mental health outcomes (Connor & Davidson, 2003). Early research viewed resilience as a trait that could be identified through outcomes such as achieving across age-appropriate developmental tasks and subjective well-being (Wright et al., 2013). They identified correlates of resilience, that is, traits and characteristics of the environment found when positive outcomes occurred. In contrast, later studies investigated resilience as a process such that how an individual interacts with his or her context determines the development of such a trait (Wright et al., 2013). Wright and colleagues (2013) suggest viewing resilience on a continuum across domains (i.e., biological, psychological, social, occupational) and, furthermore, to be cognizant and attempt to minimize factors that may affect functioning. Recent work has focused on preventative interventions such as youth development and community programs to foster resilience at critical timepoints to reduce risk and promote adaptive development.

High resilience has been linked to many positive benefits. The Seattle Social Development Program sought to cultivate resilience in elementary school children living in high crime neighborhoods; results indicated that as resilience increased, students had a greater school connection, better grades in high school, and less antisocial behavior (as cited in Wright et al., 2013, p. 29). Sport psychology literature suggests that sport may be used to develop certain traits like resilience to overcome adversity in sport (e.g., injury, failure, illness, transitions), which can be applied to other life domains (Danish, Forneris, & Wallace, 2005). Athletes who were able to confront challenges or failure by coming back stronger or thriving in spite of circumstances were identified as being resilient. Other studies have shown resilience is linked to a positive explanatory style, and subsequently expectations of success and lower state anxiety as well as positive psychosocial adaptation, achievement motivation, effort, game strategy, and other markers of subjective wellbeing (for a complete review see Galli & Gonzalez, 2015).

Additionally, resilience has been found to mediate the relationship between stressors and burnout, suggesting that this positive characteristic has protective benefits against stress (Gucciardi, Jackson, Coulter, & Mallett, 2011). Furthermore, some researchers suggest that engaging in frequent physical activity is related to higher scores on protective factors such as resilience (Moljord, Moksnes, Epnes, Hjemdal, & Eriksen, 2014). Sarkar and Fletcher (2014) have shown that metacognition is a key component to building resilience in athletes, thus sport-based youth development programs may consider resilience interventions that include an exercise component and promote the practice of self-reflection.

ZGiRLS and Sport-Based Youth Development Programs

Theoretical basis for sport-based youth development programs. Sport-based youth development programs (YDP) are intended to teach skills and promote growth in sport, and in social and life domains (Anderson-Butcher et al., 2013; Perkins & Noam, 2007). These programs have clear objectives for positive youth development (PYD) such that sport is used as a common language and vehicle for self-reflection for learning sport-based life skills that can help adolescents be successful in many environments (Petitpas, Cornelius, Van Raalte, & Jones, 2005). *Sport-based life skills* are defined as “those internal personal assets, characteristics, and skills such as goal setting, emotional control, self-esteem, and hard work ethic that can be facilitated or developed in sport and are transferred for use in non-sport settings” (Gould & Carson, 2008, p. 60). There are a number of community sport-based YDPs that seek to instill adaptive thinking patterns, behaviors, and values during a critical time in development. For instance, Grassroot Soccer utilizes an interactive curriculum around the game of soccer and professional soccer players as role models to promote protective sexual behaviors and minimize risky behaviors in adolescents in sub-Saharan Africa (Clark, Friedrich, Ndlovu, Neilands, &

McFarland, 2006). Harlem RBI uses baseball and softball as a medium to promote physical and mental health, positive relationships, teamwork, community and societal engagement, and skills to be successful in school or at work (Berlin, Dvorkin, Eames, Menconi, & Perkins, 2007). Girls on the Run is another example of a sport-based YDP designed to enhance self-esteem and self-concept, favorable changes in attitudes toward fat, and decrease risk for eating disorders through a 12-week running and curriculum program (DeBate & Thompson, 2005; Martin, Waldron, McCabe, & Choi, 2009; Sifers & Shea, 2013). Weissberg et al., (2003) suggests preventative interventions such as sport-based YDPs, that are well-coordinated and founded on multidisciplinary research, are an excellent way to promote positive outcomes and to prevent adjustment and mental health problems.

ZGiRLS. ZGiRLS stands for “ZERO Limitations.” The mission of this sport-based YDP is to teach adolescent girls tools to remove internal barriers to success and to help girls develop a new perspective, therefore, “empowering girls in sports to be confident, centered, and courageous” (ZGiRLS, 2018).

ZGiRLS is designed for girls participating in sport because while sport can provide an excellent avenue for teaching life lessons, participating in sport also presents unique stressors that their non-athletic peers may not face. Stressors may include competition anxiety, injury, illness, underperforming, burnout, pressure, career transitions, rigorous training schedules, time demands, expectations, organizational stressors (e.g., difficulty with coaches or teammates), and balancing sport stressors with common life events (e.g., relationship or family problems, death of loved one, academic problems; Sarker & Fletcher, 2014). Some researchers even suggest that encountering stressors may be considered a learning opportunity such that when individuals use new resources and engage support systems, they build a sense of mastery for

future adversity (Meichenbaum, 1985). Additionally, adversity may highlight strengths that may act as protective factors and buffer the impact of stressful events in the future. Thus, a program like ZGiRLS that teaches girls in sport skills to cope with adversity may be beneficial in both sport and life.

Participants in ZGiRLS meet monthly with their “Circle” (i.e., 6-10 girls from the same team or sport) for the duration of the 8-month program. Each “Huddle” or 60-minute lesson includes an icebreaker, discussion questions, workbook activities, an interactive activity or game, media clips, and take-aways including an at-home exercise, called ZWORK, to help girls practice what they learn between Huddles. The curriculum is taught by athletic female role models, many of whom competed at the collegiate level or higher; on occasion, mentors may be coaches. To become a ZGiRLS Mentor, every woman must complete an application, phone interview, National Background Check, and the ZGiRLS Mentor Training Program. The 6-hour online training includes topics such as adolescent development, promoting positive growth, creating a safe and supportive environment, group facilitation, ethics of youth coaching, and specifics about teaching the curriculum for each Huddle. This rigorous process of training seeks to select and develop mentors characterized by trustworthiness and commitment to maintain the fidelity of the program and the values of ZGiRLS. Mentors are also provided with a ZGiRLS Mentor Guide, which includes instructions and cues to assist in teaching each lesson and further ensure the feasibility of implementing the program reliably.

The ZGiRLS Curriculum focuses on psychological skills training (PST) which may be defined as “the learning and implementation of cognitive behavioral techniques to assist sport participants in the development of mental skills to assess, monitor, and adjust their thoughts and feelings to achieve performance success as well as personal well-being” (Vealey, 1988). PST

includes what is typically considered the five to six cardinal skills of sport psychology: relaxation, self-talk, concentration, imagery, mental routines, and goal setting (Gould, 2015; Sharp, Woodcock, Holland, Cumming, & Duda, 2013). ZGiRLS teaches skills such as self-talk, goal setting, confidence, body acceptance, mindfulness, and many more. The desired outcomes of participation in ZGiRLS include an increase in knowledge and use of psychological skills, and subsequently a reduction in symptoms of depression and anxiety, and an increase in self-esteem and resilience. Of specific interest to this research study were psychological skills (i.e., self-talk and goal setting), and thus, the theoretical basis for these skills and methods used in the ZGiRLS curriculum was examined.

Self-talk. Positive self-talk is an internal dialogue that is encouraging or motivational (Taylor, Gould, & Rolo, 2008). In sport psychology literature, numerous studies have sought to compare differences in athletes' use of skills or presence of psychological traits and performance outcomes. One study found that medalists in the Olympics report significantly greater use of positive self-talk than non-medalists. Additionally, female athletes reported significantly greater use of self-talk as a psychological skill than male athletes, suggesting that self-talk is an important skill specifically for females and to aid in optimal performance (Taylor et al., 2008). Another study on adolescent female soccer players considered the relationship between the frequency of self-talk and self-talk strategies, and psychosocial outcomes. Results showed that positive self-talk, self-talk that refutes negative thoughts, and greater frequency of self-talk as a strategy were negatively related to perfectionism and trait anxiety, and positively related to confidence (Burton, Gillham, & Glenn, 2013). Tod, Hardy, and Oliver (2011) conducted a meta-analysis on the effect of self-talk. In an effort to understand the impact of self-talk on performance the researchers caution that moderating and mediating variables must be

explored. Moderator variables may include the type of self-talk (i.e., positive versus negative and instructional versus motivational) and athlete skill level. Findings suggest that positive self-talk is beneficial. Likewise, evidence has shown equal support for both instructional and motivational self-talk when matched appropriately with task demands. Additionally, numerous studies confirm that youth, novice, and elite athletes experience positive benefits when using self-talk. With regards to mediators, some research posits that self-talk directly influences both cognition and behavior, and thereby, indirectly influences affect. Findings suggest that instructional and motivational self-talk positively effect behavior (e.g., executing a skill or effort), whereas, positive and motivational self-talk may act to reduce cognitive anxiety (Tod et al., 2011). These studies support the rationale for a self-talk intervention for female adolescent athletes such as ZGiRLS participants.

The Huddle entitled “Mental Control” teaches two self-talk strategies and builds on the previous Huddle which helps girls increase awareness of their thoughts. The first strategy is called “re-frame it,” in which girls learn to positively frame instructions from coaches or even themselves. For example, a volleyball player might say to herself “don’t hit it out,” or she could reframe this statement to “hit it in the corner.” The second strategy is the ZGiRLS 3-Step Method, in which girls learn to (a) *observe* their thoughts (and determine if thoughts are helpful), (b) *stop* by imagining a stop image and/or taking a deep breath (if the thought is not helpful), and (c) *replace* negative self-talk with a constructive thought (i.e., positive or motivational self-talk) that is action-oriented (i.e., instructional self-talk). Girls are given a several common negative self-talk statements and asked to match it with a positive replacement. For example, “I can’t believe I just messed up!” could be replaced with “So I messed up...even the best athletes make mistakes. I’ll work on fixing it this week in practice.” Finally, girls are asked to identify their

own negative self-talk and write down how they will replace thoughts with positive self-talk next time. The homework activity centers on reflection and emphasizes continued awareness of maladaptive self-talk and practicing tools to promote positive self-talk. Self-talk is revisited in future Huddles by introducing affirmations, cue words, using tools to reframe or replace negative thoughts about their body, and having girls talk to themselves as they would a close friend by integrating skills of positive self-talk and self-compassion.

Goal setting. Goals refers to a “future valued outcome” or “the desire to attain an object or outcome” (Locke & Latham, 2006). Goals thereby function in a way that directs focus, energy or effort, and behaviors toward goal attainment. Goal setting becomes the process through which goals are determined, and often includes making plans to achieve one’s goals. Over 30-years of research on goal setting in the field of industrial/organizational psychology suggests that goal setting is effective when considering the relationship between setting goals and performance. Over time researchers have recognized the complexity of goal setting and the role of moderators and mediators in this relationship. A few key moderators include commitment, feedback, task complexity, and support. Mediating variables may include personality traits, ability, motivation, autonomy or goal choice, goal specificity, difficulty of the goal, type of goals set, goal framing (i.e., threat versus opportunity or approach versus avoidance), goal orientation, self-efficacy, and rewards (Locke & Latham, 2006). Furthermore, Locke and Latham (2006) suggest that while goal setting appears to directly effect cognition and behavior, goals indirectly influence affect in that striving toward and achieving a goal is related to motivation, satisfaction, a sense of purpose, feelings of success, and even well-being.

The field of sport psychology considers how research findings on goal setting may be applied to sport and athletes. Similar to findings in industrial/ organizational psychology

research, literature shows that goal setting is positively related to performance. Applied sport psychologists suggest employing multiple goal setting strategies to achieve desired outcomes (Gould, 2015). For example, a study conducted with competitive swimmers found that setting performance goals (i.e., an objective goal based on the individual's performance, for example, to improve a free throw percentage from 60 to 70% by the end of the season) was related to lower state anxiety and other positive psychological traits when compared to a group who only set outcome goals (e.g., an objective goal in which achievement depends on how other competitors perform or a relative performance standard, for example, to finish 1st place in the race). Setting effective goals (i.e., challenging but realistic goals and time-oriented goals) may reduce negative emotions that may be evoked by poorly set goals. Likewise, setting process goals (i.e., a goal centered on the pieces within an individual's control that facilitates performance, for example, eating a healthy pre-race meal or completing a mental routine before vaulting) is related to less worry as athletes feel more in control. Additionally, setting both short- and long-term goals as well as setting goals for practice and competition have been found to increase motivation and other positive emotions. Lastly, researchers suggest setting positive goals may help athletes focus on success, rather than avoid or feel threatened by competition or other challenges (Gould, 2015). These studies offer support for including a goal setting intervention in the ZGiRLS program. Although the literature focuses on the consistent relationship between goal setting and performance, this study considered the regulatory effect that goal setting may have on one's thoughts and emotions, and thus, the effect on negative and positive mental health outcomes.

The Huddle entitled "Goal Setting" teaches two strategies for setting effective goals. The first strategy is "SPUNKY GOALS." Girls write down their dream goals for sport and life, and then ensure each goal is written in a way that meets the SPUNKY GOAL criteria, and

consequently, facilitates goal achievement. Dream goals are intended to help girls build excitement and approach goals that are challenging rather than settling on goals that will be easy to attain. SPUNKY is an acronym for the following: *specific, present and positive, under your control, notify someone, keep revising, and you got this!* The second strategy is an activity called “Goal Setting Workshop.” This process guides girls to set outcome goals, which offer direction and inspiration for daily activities and hard work. Goal setting functions as a “game plan,” that is, helps girls determine physical and mental process goals that will aid in accomplishing their outcome goal. Lastly, the ZWORK for this section encourages girls to reflect on the experience of setting goals and making a plan, to share their goals with someone, and to engage in the process of chasing their dream goals including the consequential challenges and successes. Goal setting is revisited in future sessions, as girls apply goal setting strategies to communication, social media use, nutrition, and any other area of sport or life in which girls want to make a change in their thoughts, feelings, or actions.

Learning and implementing skills such as self-talk and goal setting may enhance mastery and development within the sport context. Moreover, ZGiRLS’ trained mentors demonstrate how these same psychological skills can be applied to other areas of the girls’ lives such as school, work, or other activities and furthermore, how consistent use of skills will increase chances of success and satisfaction. Newman and Alvarez (2015) suggest that mentors must intentionally show how sport-based life skills apply to other domains and recommend mentors learn strategies and techniques for drawing parallels between sport and life. In as much, ZGiRLS takes a preventative approach such that the use of psychological skills will promote positive changes in thinking and feeling, and in turn, decrease negative mental health outcomes and promote positive mental health outcomes.

While the benefits of PST for performance enhancement in sport and life is well supported by the literature, research is lacking on the utility and effectiveness of teaching psychological skills to youth athletes (McCarthy, Jones, Harwood, & Olivier, 2010). McCarthy et al., (2010) suggest that a developmental framework is prerequisite for understanding differences in youth athletes' physical, social, psychological, and emotional functioning and for designing psychological skills interventions. Moreover, results from a qualitative study by McCarthy and colleagues (2010) indicate differences in knowledge of psychological skills related to athletic developmental stage (i.e., sampling versus specializing). As follows, athletes in the specializing years, defined by ages 13-16 years or those invested in playing a sport year round, may be primed and ready to engage and integrate PST into practice, competition, and other areas of their lives.

Similarly, some applied practitioners suggest that childhood and adolescence is a developmentally appropriate stage to introduce psychological skills in that there may be greater potential for learning and growth at young ages compared to adults who may have adopted an internalized and less malleable way of responding (McCarthy et al., 2010). Adolescence, thereby, may be the ideal time to learn new strategies with the support and flexibility to allow for growth. Sharp and colleagues (2013), who conducted a qualitative evaluation of a PST program, made several recommendations to maximize service delivery for youth athletes including the following components: (a) interactive and structured, (b) incorporating a psychoeducational component of skills and strategies, and (c) to be completed with a group or team. Therefore, a program like ZGiRLS is timed and designed fittingly to guide adolescents to establish a foundation of psychological skills which can then be expanded upon further when demands of their sport or life require a more in-depth, sophisticated skill set.

Theoretical basis for cognitive emotion regulation. Cognitive emotion regulation is the mechanism by which ZGiRLS attempts to influence adolescent risk and protective factors. Cognitive emotion regulation is conceptualized as the strategies people use to manage or control their emotions, some of which are conscious whereas, others are engaged without conscious awareness. Several strategies have been identified including thought processes that approach emotion in either a positive or negative way, seek to ignore or suppress emotion, or simply recognize and accept the emotions one is feeling. Furthermore, some of these strategies, referred to as response-focused cognitive emotion regulation strategies, are used to cope with emotion once it happens, whereas antecedent-focused cognitive emotion regulation strategies are engaged to manage emotions in planful, anticipatory ways that influences an individual's physiological and behavioral response to emotion (Gross & John, 2003). For example, an athlete might use cognitive reappraisal, an antecedent strategy, to think of competition as a way to test their abilities rather than basing their self-worth on comparison to others. In essence, the athlete chooses to construe an emotion-eliciting situation in a manner that changes the impact of the event and associated emotions. On the other hand, an athlete might use expressive suppression, a response focused strategy, by acting confident (e.g., facial expression, posture, eye gaze, etc.) to negate negative emotions they might be feeling prior to an important game or race. While this strategy may be effective in the moment, it may lead to a sense of internal incongruence and may also suppress positive emotions. Self-talk and goal setting may be utilized to shift or change thoughts (e.g., reframing or stopping thoughts) as well as determine where and how to direct one's focus (e.g., performance or outcome and positive goals). How regularly and effectively individuals use such strategies in response to both positive and negative emotion has key

implications for how individuals experience and express emotion, relate and communicate with others, and on mental health outcomes.

Adolescence has been identified as a time when cognitive emotion regulation develops (Aldwin, 1994; Lazarus, 1999). Garnefski and Kraaij (2006) compared means indicating the use of cognitive emotion regulation strategies in five different groups across the lifespan. Results showed greater use of cognitive emotion regulation strategies in late adolescents (16 to 18 years old) when compared to early adolescents (12 to 15 years old); adults (18 to 65 years old) showed greater use of strategies when compared to late adolescents, except for positive refocusing, suggesting that cognitive emotion regulation is a developmental process. This study also considered gender differences; scores indicated that females engaged in greater use of both positive and negative cognitive emotion regulation strategies. Rumination was one such strategy that was used more frequently with age with a significant difference emerging in late adolescence. The researchers also explored the relationship between depressive symptoms and cognitive emotion regulation strategies. There was a significant positive relationship between symptoms of depression and self-blame, rumination, and catastrophizing. Conversely, there was a significant negative relationship between symptoms of depression, and positive refocusing and positive reappraisal (Garnefski & Kraaij, 2006; Garnefski, Kraaij, & Spinhoven, 2001). In a female undergraduate population (*Mean age = 20*), Gross and John (2003) found that individuals who use reappraisal as a cognitive emotion regulation strategy experienced more positive emotion and less negative emotion, and thereby, experienced fewer depressive symptoms, greater self-esteem, and greater overall well-being. Correspondingly, the ZGiRLS curriculum teaches psychological skills, such as self-talk and goal setting, that may impact adolescent girls' appraisal of the situation and increase the likelihood of using adaptive cognitive emotion

regulation strategies and thereby, decrease depression and anxiety and increase self-esteem and resilience.

Over the past decade researchers and practitioners in sport, exercise, and performance psychology have taken a greater interest in the role of cognitive emotion regulation in sport performance. In fact, Moore and Gardner (2011) suggest that contemporary models of performance enhancement and PST are best understood through the lens of providing cognitive emotion regulation strategies. While some researchers consider successful sport performance to be the marker of effective use of such strategies (Martinent, Ledos, Ferrand, Campo, & Nicolas, 2015), Tamminen, Gaudreau, McEwen, and Crocker (2016) found that adolescent athletes' use of cognitive emotion regulation strategies was positively related to enjoyment and commitment, which have key implications for long-term participation in sport and mental health outcomes. Lane and colleagues (2012) identified a wide range of benefits from performance to well-being when athletes use regulation strategies, however, they found that athletes are more likely to engage strategies if they believe there will be performance improvements (Lane, Beedie, Jones, Uphill, & Devonport, 2012). Likewise, ZGiRLS teaches psychological skills with the intent to promote cognitive emotion regulation, and thereby provide strategies to help girls be their best in sport and life.

The Current Study

The purpose of the present study was to investigate the relationship between psychological skills and mental health outcomes among adolescent participants in ZGiRLS. It was hypothesized that greater psychological skills (i.e., self-talk and goal setting) would predict greater cognitive emotion regulation, which would in turn be associated with less depression and anxiety and greater self-esteem and resilience. In this study, a program evaluation of ZGiRLS

was conducted to understand if the psychological skills curriculum lead to changes in girls' use of psychological skills and subsequent changes in cognitive emotion regulation, and mental health outcomes over the course of the program.

This study sought to fill a gap in the literature by incorporating a developmental approach to teaching psychological skills to adolescent girls, and further to assess the effectiveness of teaching psychological skills both in terms of the curriculum and delivery mechanism. ZGiRLS is unique in that all participants are athletes, most of which are in the specializing years of their sport, and thus, may be considered developmentally prepared to reap the benefits of such a program. Lastly, ZGiRLS is unique in that it is a curriculum based program without an athletic component to participation, yet the program relies heavily on the common language of sport and athletic role models to teach psychological skills for sport and life. This study adds to the literature in that it is the first study on a sport-based YDP with this delivery model that examines negative and positive mental health outcomes in adolescent girls.

CHAPTER II

Method

Sample and Participant Selection

Participants were 107 adolescent girls registered for ZGiRLS, an 8-month sport-based YDP. Female youth athletes who compete in the various sports such as ski racing, soccer, basketball, gymnastics, track, swimming, and others completed the survey. Among the participants (*Mean age* = 12.35; *SD* = 1.41), years of participation in the primary sport ranged from 1-2 years (2.8%), 3-5 years (37%), 6-9 years (37%), and 10 years or more (18.5%). Participants identified as 88.9% Caucasian, 2.8% Asian American, and 1% other. Among participants 83.3% lived with parents who were married. The yearly household income ranged

from less than \$30,000 (1.9%), \$31,000-60,000 (1.9%), \$61,000-80,000 (.9%), \$80,000-100,000 (45.4%), \$101,000-\$150,000 (5.6%) to more than \$151,000 (19.4%).

Sample Size, Power, and Precision

Sample size needed for a detectable effect size was dependent on the selected analyses. Two data analytic plans were considered. The first plan consisted of running a series of simple mediation models for each independent and dependent variable using the PROCESS Macro in SPSS. Results from an *a priori* power analysis using G*Power 3.1 software indicated a minimum of 77 participants would be required for a medium effect size (.15) and power of .80. The second and selected data analytic plan consisted of conducting a path analysis using AMOS. Although path analysis is a special case of Structural Equation Modeling (SEM) that contains only observed variables, the rules of thumb for SEM were considered for determining the sample size required to detect effects present in the data. Varying guidelines for SEM have been proposed including 10 cases per variable (Nunnally, 1967), or a minimum of 100 or 200 participants (Boomsma, 1982; Boomsma, 1985). Some researchers have questioned the rules-of-thumb for SEM suggesting that sample size requirements should be reflective of the parameter estimates, variables, and aim of the research study (MacCallum, Widaman, Zhang, & Hong, 1999; Wolf, Harrington, Clark, & Miller, 2013). Finally, Fritz and MacKinnon (2007) posit that smaller sample sizes are acceptable especially when resampling methods are used to increase power. A sample size of a minimum of 100 participants was proposed.

Procedure

The Seattle Pacific University Institutional Review Board (IRB) approved this study and all procedures have been in place since June 2015. Participants were recruited by ZGiRLS. When parents registered their daughters for the 8-month program via the ZGiRLS website, they

were given the opportunity to give informed consent for their daughters to participate in the research study component of ZGiRLS. Then at the first ZGiRLS gathering, girls with parental consent watched a video describing the research study including the risks and benefits of participation. A ZGiRLS mentor then gave girls the opportunity to participate in the research study and to indicate their decision to participate by signing an adolescent assent form.

A combination of an online survey, and pencil and paper surveys were used to collect the data. ZGiRLS is a national non-profit organization that seeks to empower adolescent girls in sport and in life through an 8-month psychological skills curriculum program. During online registration parents of ZGiRLS participants were provided information about the research study. Parents who gave permission for their daughters to participate by providing consent were administered a demographic questionnaire; completion time was estimated to be less than two minutes.

ZGiRLS headquarters provided ZGiRLS mentors with a list of registered girls. This list, generated from registration included a column indicating parental consent. When girls arrived at the first gathering, mentors split girls into two groups (a) girls with parental consent and, (b) girls without parental consent. Girls with parental consent watched a video about the research study, in which the narrator read the adolescent assent form. Girls were given the opportunity to ask questions about the study and to provide assent. Girls without parental consent or those who decided not to participate completed an activity from the ZGiRLS curriculum. Mentors were instructed to emphasize the girls' choice to avoid pressure or anxiety girls may feel regarding participation in a research study. Girls who decided to participate were given a packet of questionnaires, a pencil, and an envelope. The questionnaires took about 15 minutes to respond to 90 items about psychological skills, anxiety and depressive symptoms, self-esteem, and

resilience. Mentors also recorded girls' attendance over the course of the 8-month program. Participants then sealed surveys in an envelope and returned the completed survey to a ZGiRLS mentor. The ZGiRLS mentor was provided with US Postal Service postage paid priority mail envelopes. Mentors mailed the adolescent assent forms and surveys to the primary investigator at Seattle Pacific University.

At the completion of the ZGiRLS curriculum program, girls completed the same questionnaires and the same process was followed regarding mailing responses. Each participant was assigned an identification number after completing the pre-intervention questionnaire. Responses to the questionnaires were stored separately from any identifying information. When the post-intervention questionnaires were received, the name and identification number file was used to code the data with the same identification number. Once item responses were separated from any identifying information, post-intervention responses were matched with the previous data collection. Participants will be debriefed at the completion of the study.

Measures

Self-talk. The Test of Performance Strategies-2 (TOPS-2; Thomas, Murphy, & Hardy, 1999) measures athletes' use of psychological skills in both training and competition. In this study, we used one subscale from the TOPS-2 to measure self-talk. Self-talk refers to "the content of your thoughts, or the dialogue you have with yourself, when participating in your sport" (Woodcock, Duda, Cumming, Sharp, & Holland, 2012, p. 9). This 4-item self-report subscale asks participants to indicate the frequency with which self-talk is a strategy in various situations using a 5-point Likert scale (1 = never and 5 = always). Sample items included, "I motivate myself to give my best through positive self-talk" and "I have specific cue words or phrases I say to myself to help me give me best." Total scores on the TOPS-2 self-talk subscale

indicate greater use of self-talk with a possible range of scores from 4 to 20. The TOPS-2 has strong psychometric qualities including construct validity, reliability, and test-retest reliability, making this assessment an excellent choice for both research and applied practice. Hardy, Roberts, Thomas, and Murphy (2010) report Cronbach's α at .82 for both practice and competition, while in our study, $\alpha = .83$.

Goal setting. The Athletic Coping Skills Inventory (ACSI-28; Smith, Schutz, Smoll, & Ptacek, 1995) measures psychological skills or coping resources in a sport context. The goal setting subscale from the ACSI-28 was selected for use in this study. Goal setting is defined as "deliberate setting of specific performance targets to be achieved in your sport" (Woodcock et al., 2012, p. 9). These 4-items ask participants to recall how often the experience of using specific psychological coping skill occurs using a 4-point Likert scale (0 = *almost never* and 3 = *almost always*). Examples of sample items are, "On a daily or weekly basis, I set very specific goals for myself that guide what I do" and "I tend to do lots of planning about how to reach my goals." Total scores on the ACSI-28 goal setting subscale indicate greater use of setting goals as a coping resource with a possible range of scores from 0 to 12. Scale authors report high internal consistency, discriminant validity, and test-retest reliability and recommend this measure for use in both research and applied settings. Smith et al., (1995) report Cronbach's α at .72 for goal setting. In our study, the coefficient $\alpha = .73$ for goal setting.

Cognitive emotion regulation. The Cognitive Emotion Regulation Questionnaire (CERQ-short; Garnefski, Kraaij, & Spinhoven, 2001) was used to measure cognitive emotion regulation strategies. Cognitive emotion regulation is defined as characteristic cognitive styles in response to stressful events. This 18-item self-report inventory measures cognitive emotion regulation using a 5-point Likert Scale (1 = *almost never* and 5 = *almost always*). Respondents

selected the number that corresponds to how they usually think or feel when negative or stressful events happen with items representing cognitive strategies in the following nine subscales: self-blame, other-blame, rumination, catastrophizing, positive refocusing, planning, positive reappraisal, putting into perspective, and acceptance. Examples of sample items are, “I am preoccupied with what I think and feel about what I experienced,” and “I think that I can become a stronger person as a result of what has happened.” Total scores range from 18 to 90 with higher scores indicating greater use of cognitive strategies. Garnefski and Kraaij (2006) indicate that the CERQ has adequate psychometric properties and the short form is an excellent tool for assessment or research as well as can be administered to people 12 years or older. Previous studies show adequate factorial validity, criterion validity, internal consistency, and test-retest reliability (Gross & John, 2003); Uphill, Lane, and Jones (2012) confirmed these findings using the CERQ with athletes. Scale authors (Garnefski & Kraaij, 2006) report Cronbach’s α for all subscales to range from .62 to .85. In our study, the coefficient $\alpha = .82$.

Depression symptoms. The Revised Child Anxiety and Depression Scale (R-CADS) was used to measure symptoms of depression according to DSM-IV criteria for Major Depressive Disorder (American Psychiatric Association, 1994). The 10-item short version measures symptoms of depression using a 4-point Likert Scale (0 = *never* and 3 = *always*) by asking respondents to select the number that corresponds with how often a specific thing (e.g., thought, feeling, behavior, physiological symptom) happens to them. Examples of sample items are, “I feel sad or empty” and “I have trouble sleeping.” Total scores range from 0 to 30 with higher scores reflecting higher depressive symptoms. Researchers show strong psychometric properties for use of the RCADS in both clinical and community youth samples for diagnostic purposes as well as distinguishing between symptoms of depression and anxiety (Chorpita, Yim,

Moffitt, Umemoto, & Francis, 2000). Previous studies show excellent face and content validity as well as convergent and discriminant validity (Chorpita et al., 2000; Kösters, Chinapaw, Zwaanswijk, van der Wal, & Koot, 2015). Using the RCADS short form in a school sample, Ebesutani et al., (2012) reported Cronbach's α at .79 for the Depression Total scale. In our study, the coefficient $\alpha = .81$.

Anxiety symptoms. The Revised Child Anxiety and Depression Scale (R-CADS) measured symptoms of anxiety in accordance with DSM-IV (American Psychiatric Association, 1994). The 15-item short version measures symptoms of anxiety using a 4-point Likert Scale (0 = *never* and 3 = *always*) by asking respondents to select the number that corresponds with how often a specific thing (e.g., thought, feeling, behavior, physiological symptom) happens to them. Examples of sample items are, "I worry that something bad will happen to me" and "I worry when I think I have done poorly at something." Total scores range from 0 to 45 with higher scores reflecting higher anxiety symptoms. Previous studies have reported strong psychometric properties for use of the RCADS in clinical and community youth samples for diagnostic purposes as well as distinguishing between anxiety symptoms and potential diagnoses (Chorpita et al., 2000; Weiss & Chorpita, 2011). Previous studies show excellent validity including face, content, convergent, and discriminant validity (Chorpita et al., 2000; Kösters et al., 2015). Using the RCADS short form in a school sample, Ebesutani et al., (2012) reported Cronbach's α at .86 for the Anxiety Total scale. In our study, the coefficient $\alpha = .79$.

Self-esteem. The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965, 1989) measured one's positive and negative evaluations of self. This 10-item self-report inventory asks participants to respond to statements using a 4-point Likert Scale (1 = *strongly disagree* and 4 = *strongly agree*). Sample items included, "On the whole, I am satisfied with myself" and "I take a

positive attitude toward myself.” Total scores range from 10 to 40 with higher scores reflecting positive evaluations of self and higher self-esteem. Previous studies demonstrate adequate face and construct validity although debate continues if this measure assesses self-esteem as a unidimensional or multidimensional construct (Wongparkaran & Wongparkaran, 2012). McKay, Boudeszek, and Harvey (2014) reported Cronbach’s α at .86 in a community sample of adolescents, while in our study, $\alpha = .71$.

Resilience. The Connor-Davidson Resilience Scale-25 (CD-RISC; Connor & Davidson, 2003) was used to measure one’s ability to cope and to successfully adapt in the face of risk or adversity. This 25-item self-report inventory measures resilience using a 5-point Likert Scale (0 = *not true at all* and 4 = *nearly true all the time*). Respondents selected the number that corresponds to how much they agree with items spanning the following six categories: physical, interpersonal, emotional, cognitive, behavioral, and spiritual. Examples of sample items are, “I think of myself as a strong person when dealing with life’s challenges and difficulties” and “I believe I can achieve my goals, even if there are obstacles.” Total scores on the CD-RISC indicate greater resilience with a possible range of scores from 0 to 100. Scale authors report satisfactory internal consistency, test-retest reliability, and convergent and discriminant validity (Connor & Davidson, 2003). Previous studies report Cronbach’s α at .93 and .89, respectively (Jørgensen & Seedat, 2008; Yu, Lau, Mak, Zhang, & Lui, 2011). In our study, the coefficient $\alpha = .91$.

CHAPTER III

Results

Data Analytic Plan

The present study evaluated four hypotheses related to participating in ZGiRLS: (a) a change in psychological skills (i.e., self-talk and goal setting), (b) a change in cognitive emotion regulation, (c) a change in mental health outcomes (i.e., depression, anxiety, self-esteem, and resilience), and (d) a change in cognitive emotion regulation will mediate the relationships between psychological skills and mental health outcomes. The hypothesized model is shown in Figure 1. Data from adolescent girls who completed the ZGiRLS sport-based youth development program (YDP) between 2015 and 2016 were used to examine these hypotheses. Girls completed measures of self-talk, goal setting, cognitive emotion regulation, depression, anxiety, self-esteem, and resilience prior to beginning the program and again at completion of the program.

Paired samples *t*-tests were used to examine changes from baseline to post-intervention. ZGiRLS curriculum focuses on increasing knowledge and teaching psychological skills, thus we anticipated an increase in both self-talk and goal setting. Subsequently, desired outcomes of participation in the program include an increase in cognitive emotion regulation, self-esteem, and resilience, as well as a decrease in symptoms of depression and anxiety.

Path analysis, a type of structural equation modeling (SEM), was used to examine the mediating role of cognitive emotion regulation between psychological skills and mental health outcomes. The residualized change score method was used to evaluate these hypotheses, in which the pre-intervention scores were regressed onto the post-intervention scores for the same variable, saving the residual values as new variables (MacKinnon, 2008). These residual scores

served as indices of change over time in each variable (i.e., self-talk, goal setting, cognitive emotion regulation, depression, anxiety, self-esteem, and resilience). The hypothesized relationships (see Figure 1) were evaluated using path analysis, which allows for examination of direct and indirect relationships among variables.

Using a mediation model, the effects of psychological skills on mental health outcomes, both directly and indirectly through cognitive emotion regulation were assessed. One thousand bootstrap samples to create bias-corrected confidence intervals (95%) were used to evaluate the statistical significance of the direct and indirect effects.

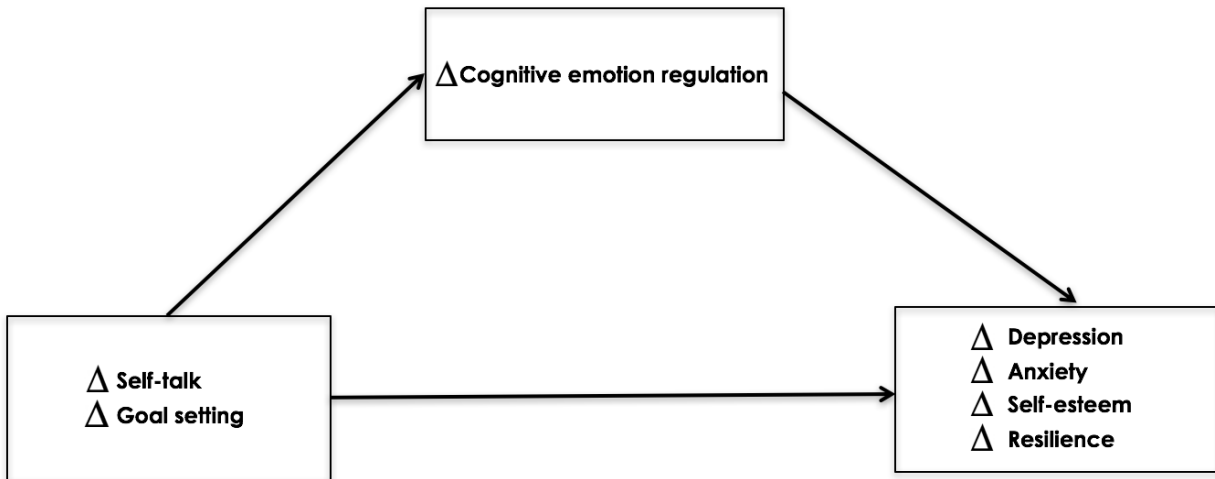


Figure 1. Hypothesized relationships between change in psychological skills, change in cognitive emotion regulation, and change in depression, anxiety, self-esteem, and resilience.

Preliminary Analyses and Data Preparation

Descriptive statistics were computed; correlation matrices for study variables at baseline and post-intervention are provided in Tables 1 and 2, respectively.

Table 1

Bivariate Correlations at Baseline (N = 107)

Variable	1	2	3	4	5	6
Self-talk						
Goal setting	.52**					
CER	.29**	.28**				
Depression	-.24**	-.18	.36**			
Anxiety	-.21*	-.06	.31**	.81**		
Self-Esteem	.28*	.23*	-.07	-.63**	-.51**	
Resilience	.50**	.52**	.21*	-.41**	-.34**	.58**

Note. * $p < .05$, ** $p < .01$. Coefficients presented are correlations at baseline.

Table 2

Bivariate Correlations at Post-Intervention (N = 107)

Variable	1	2	3	4	5	6
Self-talk						
Goal setting	.57**					
CER	.34**	.30**				
Depression	-.27**	-.10	.04			
Anxiety	-.25*	-.10	.05	.76**		
Self-Esteem	.06	.16	.09	-.39**	-.41**	
Resilience	.49**	.42**	.36**	-.43**	-.38**	.33**

Note. * $p < .05$, ** $p < .01$. Coefficients presented are correlations at program completion.

Data were analyzed and managed for missingness with the multiple imputation tools in the Statistical Package for Social Sciences (SPSS) 24.0. ZGiRLS invited 194 program participants to complete the research study. Parental consent was obtained for 150 ZGiRLS participants. Thirty-six cases were dropped because participants did not attend the first Huddle, and thus did not provide adolescent assent or complete pre-intervention questionnaires. An additional seven participants were omitted because they exceeded the 20% missingness limit on a given measure (Eekhout et al., 2014). A visual inspection of missing value patterns indicated a general or haphazard pattern as described by Enders (2010). In addition, a visual inspection

showed a monotonic pattern of missing values which can likely be attributed to attrition due to the survey length, as much of the missingness occurred on the final three scales of the survey (i.e., resilience, self-talk, goal setting).

Data contained a participant identification number (neither imputed nor used as a predictor) and the item level data. Total scores were computed for the pre-intervention questionnaires. Next item level scores were imputed for the post-intervention questionnaires, which alleviated concerns regarding far more variables than cases in the model. Age, years in sport, weekly practice hours, and total scores on pre-intervention questionnaires were used as predictors. Five multiple imputations were computed. One set of imputed data was selected and then used to calculate post-intervention total scale scores for self-talk, goal setting, cognitive emotion regulation, depression, anxiety, self-esteem, and resilience.

Prior to conducting the primary data analyses, the data were reviewed for outliers and examined for normality. Depression and anxiety, at both time points, demonstrated skew less than 1.00 (which was anticipated as this was a non-clinical sample). Additionally, self-esteem measured post-intervention demonstrated skew greater than 1.00. No other variables showed significant skew or kurtosis, suggesting that these data met the basic assumptions of normality. Because data were imputed for participants who completed pre-intervention questionnaires but did not complete post-intervention questionnaires, a series of independent-samples *t*-tests were conducted to evaluate group differences between participants who completed questionnaires at both time points and those who completed only the pre-intervention questionnaires. Significant differences were found on the following items: Nothing is much fun anymore (depression), I am afraid for being in crowded places (anxiety), When there are no clear solutions to my problems, sometimes fate or God can help (resilience), I can make unpopular decisions that affect other

people, if it is necessary (resilience), and I motivate myself to give my best through positive self-talk (self-talk). On these items, individuals who only completed the pre-intervention questionnaires scored higher on items related to negative mental health outcomes and lower on items pertaining to protective traits. No significant systematic differences between groups were found, therefore the imputed values based on the observed data are a plausible estimation of post-intervention values.

Paired samples *t*-tests were also conducted (see Table 3) to evaluate the hypotheses that there would be a change in scores from baseline to post-intervention. Self-talk, cognitive emotion regulation, anxiety, and resilience trended in the hypothesized direction, whereas, goal setting and self-esteem decreased slightly and depression increased slightly; there were no significant difference in scores from baseline to post-intervention.

Table 3

Descriptive Statistics and Results of Paired Samples t-tests

Variable	Pre		Post		95% CI	<i>t</i>	<i>df</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Self-talk	14.50	3.33	15.17	2.63	-1.37, 0.04	-1.88	106	.063
Goal setting	7.44	2.68	7.40	2.41	-0.57, 0.65	.14	106	.891
CER	50.45	10.40	51.90	8.46	-3.44, 0.55	-1.43	106	.155
Depression	5.08	3.83	5.34	3.59	-1.03, 0.51	-.67	106	.504
Anxiety	8.74	5.34	7.81	4.67	2.02, 1.69	1.69	106	.094
Self-esteem	31.82	3.97	31.72	3.97	-.85, 1.04	.19	106	.843
Resilience	72.61	13.08	73.75	10.99	-3.83, 1.57	-.83	106	.407

Note. * $p < .05$.

Next, using the imputed data set, residualized change scores were calculated by regressing baseline scores onto the post-intervention scores for each variable. The correlation matrix for change scores is provided in Table 4. These scores, which serve as an index of change, were used to evaluate the hypothesized relationships using path analysis.

Table 4

Bivariate Correlations for Residualized Change Scores (N = 107)

Variable	1	2	3	4	5	6
Self-talk						
Goal setting	.56**					
CER	.36**	.28**				
Depression	-.29**	-.14	.00			
Anxiety	-.27*	-.14	-.03	.70**		
Self-Esteem	.19*	.17	.09	-.35**	-.36**	
Resilience	.47**	.40**	.31**	-.52**	-.42**	.36**

Note. * $p < .05$, ** $p < .01$. Coefficients presented are correlations between residualized change scores for each variable.

Path Analysis

Using Amos 25, a seven-variable path diagram (see Figure 2) including disturbances for endogenous variables, both the mediator and dependent variables, was drawn. Mediation relationships were examined through a bias-corrected bootstrapping approach to test for the significance of path analysis indirect effects (Mallinckrodt, Abraham, Wei, & Russell, 2006; Shrout & Bolger, 2002). Based on this approach, 1,000 bootstrap samples with 95% bias-corrected confidence intervals and bootstrap estimates of indirect, direct, and total effects were generated. Confidence intervals surrounding each effect were also examined. The relationships between psychological skills and mental health outcomes were determined to be mediated by cognitive emotion regulation if the following criteria was met: the direct effect value decreased compared to the total effect value, and the indirect effect was significant (Hayes, 2013; Shrout & Bolger, 2002). The hypotheses proposed eight separate mediation relationships, with both self-talk and goal setting predicting an increase in cognitive emotion regulation, and subsequently, a decrease in negative mental health outcomes (i.e., depression and anxiety) and an increase in positive mental health outcomes, that is, protective factors (i.e., self-esteem and resilience).

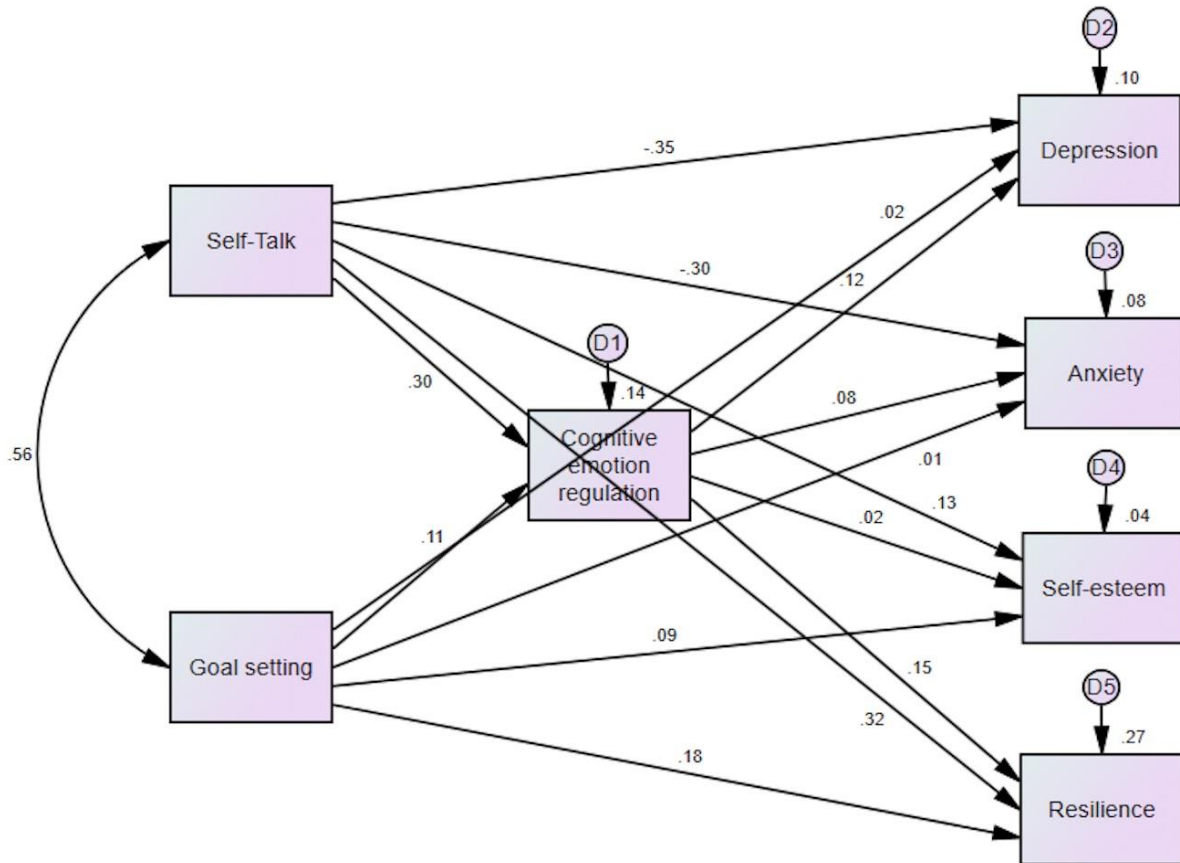


Figure 2. Path diagram in AMOS demonstrating change in psychological skills, change in cognitive emotion regulation, and change in mental health outcomes.

Results (see Table 2) suggested a significant direct effect of self-talk on cognitive emotion regulation ($B = .294, p = .004$), depression ($B = -.349, p = .008$), anxiety ($B = -.301, p = .006$), and resilience ($B = .318, p = .006$). The indirect effects of self-talk on mental health outcomes through cognitive emotion regulation were not significant, suggesting that cognitive emotion regulation does not account for the relationship between self-talk and depression, anxiety, and resilience. There were no significant direct effects for goal setting, therefore, the alternative hypothesis, that goal setting predicts a change in mental outcomes is not supported. In the full model (see Figure 2; $\chi^2 = 111.285, df = 6, p = <.001$), cognitive emotion regulation accounted for 14% of the variance, depression accounted for 9% of the variance, anxiety

accounted for 7% of the variance, self-esteem accounted for 4% of the variance, and resilience accounted for 27% of the variance.

Table 5

Bootstrap Analysis of Magnitude and Statistical Significance of Indirect and Direct Effects

IV → Mediator	→ DV	β		B	SE	90% Lower	CI Upper	<i>p</i>
Indirect Effects								
ST	→ CER	→ DEP	.295 x .124 =	.037	.034	-.014	.118	.140
ST	→ CER	→ ANX	.295 x .079 =	.024	.037	-.035	.112	.369
ST	→ CER	→ SE	.295 x .018 =	.006	.032	-.062	.067	.801
ST	→ CER	→ RES	.295 x .142 =	.044	.032	-.003	.127	.066
GS	→ CER	→ DEP	.114 x .124 =	.014	.022	-.009	.093	.214
GS	→ CER	→ ANX	.114 x .079 =	.009	.020	-.014	.072	.326
GS	→ CER	→ SE	.114 x .018 =	.002	.017	-.027	.049	.731
GS	→ CER	→ RES	.114 x .142 =	.017	.022	-.011	.087	.205
Direct Effects								
ST	→ CER			.299	.102	.078	.487	.004
ST	→ DEP			-.346	.106	-.578	-.119	.006
ST	→ ANX			-.299	.107	-.570	-.081	.005
ST	→ SE			.134	.139	-.166	.364	.402
ST	→ RES			.318	.099	.109	.521	.003
GS	→ CER			.114	.117	-.123	.347	.319
GS	→ DEP			.019	.137	-.283	.271	.915
GS	→ ANX			.009	.130	-.260	.254	.985
GS	→ SE			.091	.113	-.139	.310	.429
GS	→ RES			.184	.114	-.043	.411	.089
CER	→ DEP			.122	.099	-.073	.339	.236
CER	→ ANX			.079	.112	-.145	.300	.515
CER	→ SE			.020	.098	-.188	.201	.862
CER	→ RES			.146	.092	-.039	.333	.114

Note. The 95% confidence intervals for both the unstandardized and standardized results were produced with the bias-corrected option in the bootstrap dialogue box.

Abbreviations. Self-talk = ST, Goal setting = GS, Cognitive emotion regulation = CER, Depression = DEP, Anxiety = ANX, Self-esteem = SE, Resilience = RES

When testing a hypothesis with path analysis, it is important to examine alternate hypotheses and to determine the best fitting model of the data (Kenny & Milan, 2012; Kline, 2005). The model was respecified by dropping paths from the original model that were not significant. Using the data from the just-identified model to guide model trimming, one path at a

time was omitted, and regression weights and proportion of variance examined following each change to the model. Several non-significant paths were deleted including the paths between goal setting and cognitive emotion regulation and mental health outcomes, and the paths between cognitive emotion regulation and mental health outcomes; self-esteem was omitted from the model altogether. In the final trimmed model (see Figure 3; $\chi^2 = 99.84$, $df = 9$, $p = <.001$), cognitive emotion regulation accounted for 13% of the variance, depression accounted for 8% of the variance, anxiety accounted for 7% of the variance, and resilience accounted for 25% of the variance.

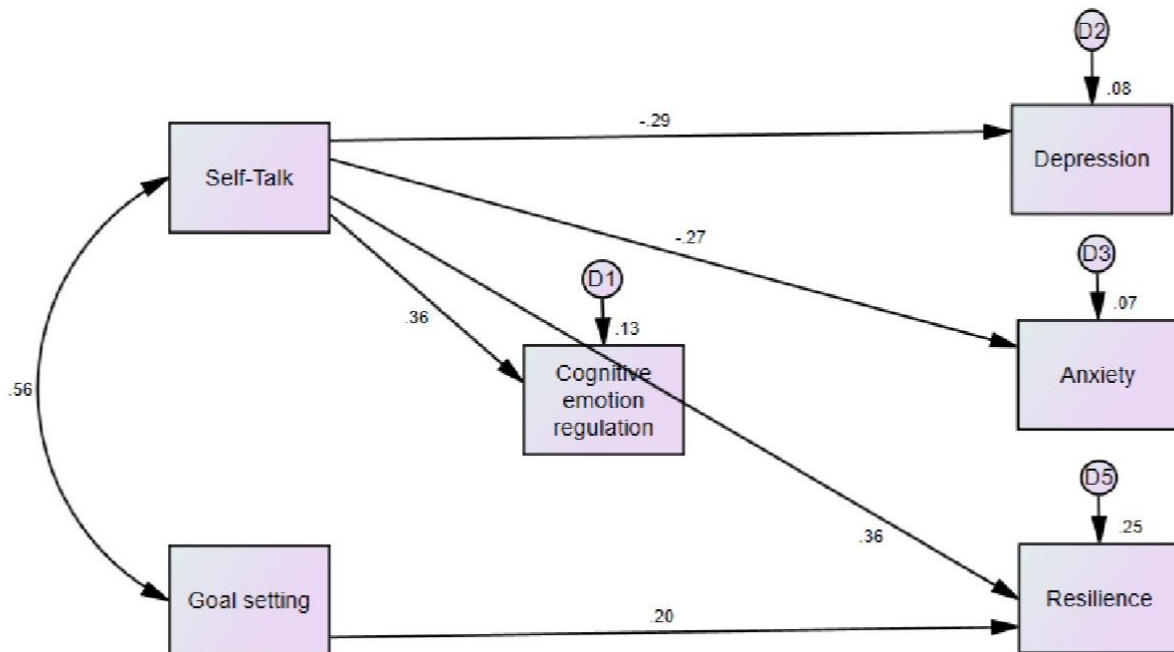


Figure 3. Trimmed model of the path diagram in AMOS demonstrating relationships between psychological skills, cognitive emotion regulation, and mental health outcomes.

Findings from the final model (see Table 3) indicate a significant correlation between self-talk and goal setting ($p = .001$). Goal setting, however, did not predict depression, anxiety, or resilience. While goal setting has been identified as an important skill for achieving objectives in sport and other life domains, the results of this study do not suggest that goal setting

regulates cognition and emotion to impact mental health outcomes. Conversely, results show that the psychological skill of self-talk may function uniquely in a way that regulates thoughts and feelings, and yet results suggest that cognitive emotion regulation does not explain the relationship between self-talk, and anxiety, depression, or resilience.

Table 6

Bootstrap Analysis of Magnitude and Statistical Significance of Direct Effects

Direct Effects	B	SE	90%	CI	<i>p</i>
ST → CER	.363	.091	.164	.524	.002
ST → DEP	-.291	.099	-.467	-.071	.006
ST → ANX	-.265	.116	-.477	-.015	.044
ST → RES	.361	.092	.166	.527	.002
GS → RES	.201	.111	-.029	.413	.079

Note. The 95% confidence intervals for both the unstandardized and standardized results were produced with the bias-corrected option in the bootstrap dialogue box.

Abbreviations. Self-talk = ST, Goal setting = GS, Cognitive emotion regulation = CER, Depression = DEP, Anxiety = ANX, Resilience = RES

CHAPTER IV

Discussion

The purpose of this study was to conduct a program evaluation of ZGiRLS to examine psychological skills that are important in sport and life. Additionally, the intent of the study was to demonstrate how such skills may predict negative and positive mental health outcomes, and to understand the effectiveness of sport-based youth development programs to inform curriculum development and implementation. To conduct this program evaluation, 194 girls were invited to participate, and 107 girls met the inclusion criteria for the study; data were collected prior to beginning the 8-month curriculum program and at the completion of the program. The following hypotheses were tested in this program evaluation: (a) there was a change in psychological skills (i.e., self-talk and goal setting), (b) there was a change in cognitive emotion regulation, (c) there

was a change in negative (i.e., depression and anxiety) and positive (i.e., self-esteem and resilience) mental health outcomes, and (d) cognitive emotion regulation explains the relationship between psychological skills and mental health outcomes. The residualized change score method was used to examine the change between pre- and post-intervention scores. The relationships between variables was tested with path analysis and subsequent post hoc analyses to best understand the data.

The first hypothesis evaluating a change in psychological skills was not supported. While participants' self-report indicated an increase in self-talk, this change was not significant ($p = .063$). There was no change in the use of goal setting ($p = .891$). Girls reported high use of both self-talk and goal setting at baseline which may not be representative of adolescent girls or even the average adolescent girl that participates in sports. When comparing scale means from our study to previous research (Hardy et al., 2010; Smith et al., 1995), data do suggest that ZGiRLS participants were unique in their high use of self-talk and goal setting. Additionally, the measures used to measure psychological skills may not be sensitive enough to detect changes.

The second hypothesis was not supported. Results showed no statistically significant change in cognitive emotion regulation as measured by the use of strategies reported at baseline and at completion of the ZGiRLS program. However, comparison of means did show an increase in the use of cognitive emotion regulation strategies, which may be clinically relevant given that ZGiRLS participants demonstrated greater use of strategies compared to their peers at the beginning of the program (Garnefski et al., 2001).

There was no support for the third hypothesis. While comparing means of participants' self-reported symptoms of anxiety indicate a decrease in symptoms, this change was not significant ($p = .094$). There was no change in symptoms of depression ($p = .504$), although a

simple comparison of means showed a slight increase in symptoms. ZGiRLS participants demonstrated fewer symptoms of depression and anxiety at baseline and at program completion when compared to their peers. One explanation for minimal change in anxiety and minor increase in depressive symptoms may be that the ZGiRLS program ran in synchrony with the participants' sport season. Some studies suggest that symptoms of depression and anxiety increase over the course of the season due to an increase in fatigue, over-training syndrome, injury, time demands, and competition pressure (Armstrong, Burcin, Bjerke, & Early, 2015; Weber et al., 2018; Weigand, Cohen, & Merenstein, 2013). There was no change in self-esteem between T1 and T2. Although not statistically significant, resilience increased over the course of the intervention. Once again, our sample demonstrated higher self-esteem and resilience compared to their peers, suggesting that our sample may have greater psychological resources than the average adolescent girl who participates in sports. Changes in mental health outcomes may be clinically significant and the impact of ZGiRLS on mental health may be realized when girls encounter future adversity. Furthermore, as the demographic of the ZGiRLS participants shifts, there may be more statistically significant changes in mental health outcomes.

The final hypothesis examining the role of cognitive emotion regulation as the mechanism that explains the change in psychological skills and mental health outcomes was not supported. No indirect effects were demonstrated in the model. Results suggested a significant direct effect of self-talk on cognitive emotion regulation, depression, anxiety, and resilience. There were no direct effects of goal setting on mental health outcomes. While symptoms of anxiety and enhanced resilience trended in the desired direction, further investigation is needed to explore other mechanisms such as relaxation, mindfulness, or gratitude that might account for changes (Moore & Gardner, 2011).

Theoretical Implications

The findings surrounding sport-based YDPs and psychological skills training (PST) are consistent with prior findings in other studies (Anderson et al., 2013; Perkins & Noam, 2007; Petitpas et al., 2005), which suggest that participating in such programs contributes to an increase of knowledge and skills but with limited magnitude of the effects. The ZGiRLS curriculum is developmentally appropriate and relies on recommendations from prior studies on YDPs suggesting that the delivery method is sound; future research may consider amendments to assess how such changes might strengthen the change in psychological skills and mental health outcomes. Furthermore, as suggested by the literature on PST, teaching self-talk and goal setting establishes a foundation of skills that may positively impact sport and life (Berlin et al., 2007; Gould & Carson, 2008; Weissberg et al., 2003). In this study, self-talk did predict changes in depression and anxiety, which suggests that this skill is key to reducing risk for mental health problems in adolescence as well as future risk in adulthood. This study investigated the use of self-talk as a skill and items only referenced positive self-talk. Hatzigeorgiadis and Biddle (2008) posit that negative self-talk may be more salient when examining relationships with cognition, performance, and anxiety. Likewise, the balance between the use of negative and positive self-talk may even be indicative of fulfillment of basic psychological needs (Karamitrou, Comoutos, Hatzigeorgiadis, & Theodorakis, 2017). Thus, a change in negative self-talk may be a stronger predictor of cognitive emotion regulation and mental health outcomes. A more in depth investigation of valence (positive-negative), perspective (internal-external), and structure (cue words-statements) may provide greater insight into the effectiveness and impact self-talk rather than simply assessing the reported use of positive self-talk (Hardy, Lew, & Hardy, 2005).

The results did not suggest that ZGiRLS contributes to a change in goal setting. Study design and the sample may have impacted results. Another explanation may be that goal setting is more closely related to action. Thereby, goal setting may, in a roundabout manner, influence thoughts and emotions through effecting behavior, as suggested by cognitive-behavioral theory, but effects may not be able to be detected in the hypothesized and tested model for this study. Self-talk did predict resilience, which suggests that this skill is key to helping adolescent girls cope and overcome adversity. Goal setting did not predict resilience. The intervention did not influence self-esteem as measured by this study. Although ZGiRLS did achieve some intended outcomes, additional skills and strategies beyond the cardinal skills of sport psychology may be necessary to see a greater effect on risk and protective factors (Moore & Gardner, 2011). Moore and Gardner (2011) posit that while psychological skills are valuable, the assumed mechanism of change does not produce the desired outcome. Their research supports a mindfulness-acceptance-commitment (MAC) approach that helps athletes utilize their emotions in a new way rather than seeking to control emotions as in traditional PST models. Overall, results do suggest that participating in ZGiRLS contributes to a change in self-talk, which supports existing theory that this skill is essential for females and especially female athletes. Thus, ZGiRLS was effective at teaching skills that may decrease negative mental health outcomes and increase positive mental health outcomes, and thereby, supports positive development in sport and life.

Although results suggest that participating in ZGiRLS contributes to a decrease in one risk factor (i.e., anxiety) and an increase in one protective factor (i.e., resilience), the results of the study do not support the existing theory on cognitive emotion regulation. The expected relationship between self-talk and cognitive emotion regulation was shown, but well-established links between cognitive emotion regulation, and depression and anxiety were not present in this

model. Future research should consider other psychological skills (e.g., mindfulness, confidence, negative self-talk) that may effect cognitive emotion regulation and consequently mental health outcomes. Likewise, additional factors that may be mediating the demonstrated relationships between self-talk and goal setting, and mental health outcomes should be examined. Finally, researchers may consider components of the curriculum design and delivery that may moderate or strengthen the desired changes in mental health outcomes, and furthermore may support existing theory or add to the literature on the role of cognitive emotion regulation in sport-based youth development programs and mental health in adolescent girls.

Clinical Implications

Program evaluations such as this study about ZGiRLS embody the local clinical scientist model, in which clinical practice identifies a need that informs research questions and likewise, research findings inform clinical practice. The implications for clinical practice including curriculum development and implementation are many and are worth exploring in greater depth.

To begin, the feasibility of a program like ZGiRLS should be considered. Initially volunteer mentors underwent rigorous training via video to prepare them to teach the curriculum for each Huddle. This presented a significant time burden for mentors and relied on mentors to deliver the curriculum in the way it was designed and intended. Over time, ZGiRLS has developed more curriculum that is delivered in a video format to further standardize the intervention and reduce the amount of training required of each mentor. Mentors still participate in online training as well as continue to guide discussions and activities. Mentors are also provided with a guidebook to help ensure ZGiRLS across the country have a similar experience regardless of the specifics they may recall from the mentor training. ZGiRLS has also been recruiting teams to complete the curriculum program together in the off-season, which helps

reduce scheduling difficulties and may augment skill acquisition with fewer demands. An important aspect of feasibility includes the financial cost, and additionally who bears this cost. One season of ZGiRLS is valued at \$199, which is typically covered by parents. A recent survey indicates that 20% of U.S. families spend \$1,000 per month on sports per child, and thus, the cost of ZGiRLS may simply be one more tool to help their child succeed in sport (USA Today, 2017). For many families, however, ZGiRLS may be cost prohibitive. As the ZGiRLS organization expands, the financial model anticipates gaining corporate sponsorships and donations, which would support recruiting and offering scholarships for underprivileged girls.

While examining the effectiveness of the ZGiRLS program as a whole is essential, understanding for whom the ZGiRLS program was effective may provide insight into clinical implications at the participant level. Changes in psychological skills, cognitive emotion regulation, and mental health outcomes were significant for many participants although on average the magnitude of the effect was limited. Inspection of the data set did not suggest any consistent trends such as age or other demographic information that might provide clues to why ZGiRLS was more effective for some participants. Further investigation into individual differences, including factors such as skills at baseline, program attendance, completing ZWORK, and parental involvement, may enhance clarity regarding when and why ZGiRLS works as well as may inform recruitment of participants that will benefit most from the ZGiRLS program.

Limitations

The results are limited in a number of ways. First of all, the most salient limitation may be the small sample size. Some researchers suggest that a minimum sample size for path analysis is the number of variables multiplied by ten, or no less than 200 to avoid problematic

solutions (e.g., Heywood cases; Hair, Ringle, & Sarstedt, 2013; Marsh & Yeung, 1998).

However, evidence exists that some models can be meaningfully tested even with small sample sizes (Hoyle & Kenny, 1999; Marsh & Hau, 1999) especially when resampling with replacement procedures are used to improve estimates (Shrout & Bolger, 2002). Nonetheless, the small sample size increases the chance of Type II error (i.e., that there is a statistical difference when none was found) as well as presents a threat to the reliability, internal validity, and external validity of the results.

Second, our study procedures present some limitations. We relied on ZGiRLS mentors to administer questionnaires. Although mentors did receive training about the purpose of the research study, parental consent and adolescent ascent procedures, and administration of the survey, there were instances in which mentors did not allocate enough time for girls to complete the study or procedures were not followed exactly, thus leading the research team to omit some participants from the data set. Likewise, the timing of our study presents another limitation. The curriculum took place over an 8-month time span, in which participants completed questionnaires at the beginning and end of the program. Participants met monthly which may influence how well participants retained skills and maintained outcomes. Since the time this study took place, ZGiRLS has adapted the format of the curriculum program to six Huddles over three months to gauge if this structure enhances engagement as well as how more frequent reinforcement from mentors and fellow participants influence the retention of skills, and thus, maintain changes in mental health outcomes. The original structure of the program also aligned with the academic year; stress, fatigue, and burnout at the end of the school is likely to be at a high, which is when participants were completing the program. It may be unreasonable to expect

participants to report a significant decrease in negative mental health symptoms and an increase in positive mental health symptoms at this time of year.

Our study also relied on self-report and may be influenced by social desirability bias. Results may be impacted by how consistently participants responded which may be impacted by that stability of traits and self-perceptions that are still developing during this critical time in adolescence. The big range in (i.e., ages 9-14) may have also influenced participants understanding of the items, how well they attended to instructions, and their ability to focus during this time-consuming survey. Finally, participant characteristics (e.g., white, high SES) may have affected our results such that scores on psychological skills, cognitive emotion regulation, and mental health outcomes may not be representative of female adolescents or most girls who play sports. As follows it is important to consider how a more diverse population with minimal access to resources might respond to a sport-based curriculum program like ZGiRLS.

Future Research

This study was designed to be the first in a program of research on ZGiRLS as suggested by Iwasaki & Fry (2013). Repeating the study is important in several ways. First, additional participants will protect against Type II error, increase power, and decrease threats to reliability and validity. Second, conducting the study again will provide the opportunity to refine administration procedures and ensure better data. Third, the ZGiRLS program has already evolved so repeating the study will aid in comparing outcomes between the original structure of the program (i.e., 8 sessions in 8 months) and the current structure (i.e., 6 sessions in 3 months). Finally, as ZGiRLS expands, the goals of the organization include offering scholarships so this curriculum program is accessible to all girls who play sports; this expansion will offer the chance to explore how a more diverse sample may change through participating in this intervention.

Most importantly, as expected in any program of research, theory should drive the curriculum program and desired outcomes, research studies should be designed to evaluate effectiveness, and subsequently, findings should inform future curriculum development and delivery. This iterative process is suggested to ensure programs like ZGiRLS continue to grow and adapt to effectively and efficiently address a need and to accomplish objectives. As Levels 2 and 3 of the ZGiRLS curriculum develops and the study continues to evolve, plans for future research include investigating psychological skills beyond positive self-talk and goal setting such as mindfulness, considering other mechanisms of change in addition to cognitive emotion regulation, and assessing additional mental health outcomes such as domain specific self-esteem, body acceptance, and more. Finally, future research may also consider inclusion of a control group, attendance data, and a longitudinal component to assess the effectiveness of participating in ZGiRLS during later high school years and into early adulthood.

Conclusion

This study was a program evaluation that sought to investigate the effectiveness of the ZGiRLS curriculum in teaching psychological skills (i.e., self-talk and goal setting), and furthermore to examine the mediating role of cognitive emotion regulation in predicting negative mental health outcomes (i.e., depression and anxiety) and positive mental health outcomes (i.e., self-esteem and resilience). It was hypothesized that over the course of participating in the ZGiRLS, there would be a change in psychological skills, and subsequently, changes in cognitive emotion regulation, and mental health outcomes. Findings suggest that ZGiRLS participants did experience changes in self-talk, cognitive emotion regulation, anxiety, and resilience. However, results did not demonstrate the hypothesized relationships, that is, that cognitive emotion regulation mediates the relationship between psychological skills and mental health outcomes.

Results indicate that the ZGiRLS curriculum program was successful at increasing participants' knowledge and use of self-talk as a skill, increasing the use of cognitive emotion regulation strategies, decreasing symptoms of anxiety, and increasing resilience. In contrast, goal setting did not impact cognitive emotion regulation or negative mental health outcomes. Neither did cognitive emotion regulation mediate the relationship between psychological skills and mental health outcomes. Lastly, the program did not effect self-esteem. This study fills a gap in the literature by investigating sport-based YDPs that utilize a psychological skills curriculum to decrease risk factors and promote protective factors. Moreover, this study examined cognitive emotion regulation as a possible mechanism of change. ZGiRLS was effective in achieving some desired outcomes of the program, and yet a continued program of research is essential to further understand why and for whom such outcomes occurred as well as what changes in the curriculum and delivery model may promote auxiliary objectives and bolster positive outcomes in adolescent girls.

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