ABSTRACT

PREDICTORS OF ROBUST SPORT CONFIDENCE IN COLLEGIATE ATHLETES

by Deanna Kay Morrison

Recent research has defined and conceptualized a form of sport confidence, known as robust sport confidence (RSC), as a stable, protective, and strong set of beliefs that enable athletes to deal with adversity, setbacks, and challenges that occur regularly in sport. (Thomas et al., 2011). The purpose of this study was to identify possible predictors of RSC in collegiate athletes. The study included 236 collegiate athletes across multiple sports. Participants completed a set of quantitative inventories regarding athlete trait RSC, Vealey and colleagues' (1998) nine sources of sport confidence, and optimism. Two open-ended questions were also included to give the participants a chance to discuss other potential predictors of sport confidence previously not considered. The present study was one of the first to examine the interrelationships between RSC and other psychological constructs.

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Chapter 1

Introduction

One of the most famous professional boxers, Muhammad Ali, once said, "to be a great champion, you must believe you are the best. If you're not, pretend that you are." In other words, to become or to be a great athlete, one must be confident that they are a great athlete. No matter the person or profession, having high self-confidence can be incredibly beneficial in one's life, such as having fewer feelings of anxiety and increased motivation. The reason for this is because one's thoughts (negative or positive) will affect their feelings and emotions, which will determine their behaviors. For example, if an athlete has inappropriate, misguiding, and negative thoughts, these can create negative feelings, and lead to poor performance. Conversely, if an athlete has appropriate, positive thoughts, then they feel more able and confident, which leads to good performances (McPherson, 2000; Neil, Hanton, & Mellalieu, 2013; Thomas, Maynard, & Hanton, 2007; Van Raalte, et al, 1995).

Although there is not an unanimously accepted definition of self-confidence, most refer to one's beliefs in their abilities or their expectations of success based those abilities (e.g., Vealey & Chase, 2008). Vealey (1986) coined the term sport-confidence as a sport-specific conceptualization of self-confidence, and defined it as the belief or degree of certainty an athlete possesses about his or her ability to succeed in sports. In the world of sports, athletes' confidence, not just in themselves but in their abilities as athletes, is important to their success in their sports.

Within the field of sport psychology, research has shown that there is a well-supported connection between confidence and performance. For example, a meta-analysis by Moritz, Feltz, Fahrbach, & Mack (1988) revealed that there was a positive relationship between an athletes' levels of self-efficacy and their sport performance. Depending on how strong their confidence is, athletes' confidence will not only determine how well they do during the next performance, but how successful they will be over time. Among the multitude of physical and psychological factors that can determine an athlete's performance, Williams and Krane's (2015) analysis of psychological factors and successful athletic performance shows that confidence seems to be the most consistent factor in determining success. More specifically, confidence is one of the key factors that distinguishes between less successful and more successful athletes. Throughout their time as competitors, though, athletes face countless obstacles and factors that can threaten

confidence, making it a surprisingly fragile mental skill. These factors can be internal or external, controllable or uncontrollable, and they can cause confidence to fluctuate throughout the day. Athletes may prepare for important competitions and feel like they are ready, but then their confidence may suffer if they realize they are competing against an intimidating or more skilled opponent, if their muscles feel sore, or if the weather is less than desirable. Because confidence is fragile but so crucial to athlete success, it is important to understand this construct, and these reasons are why sport psychologists, athletes, and coaches are so interested in this psychological characteristic.

Luckily, there is a type of confidence that is more consistent and enduring, known as robust confidence. Robust (or resilient) confidence refers to one's ability to remain confident when faced with adversity (Thomas, Lane, & Kingston, 2011). For example, an athlete with robust confidence in his work ethic and drive will believe that he can improve and perfect his skills, even when faced with the drawbacks he may encounter. Because of the unique environment of sports, athletes constantly face adversity, whether that from internal, external, controllable, or uncontrollable factors, and they must be confident in their abilities in their sport so they may perform their best. According to Thomas et al. (2011), robust sport confidence (RSC) is "a set of enduring, yet malleable positive beliefs that protect against the ongoing psychological and environmental challenges associated with competitive sport (p. 194)." To athletes, having RSC means having a strong belief in their preparations, in their abilities, and in themselves. Consequently, these strong, unshakeable beliefs act as a protective shield to lessen the blow from setbacks in athletes' confidence that they may face on a regular basis, such as anxiety (Robinson & Freeston, 2015), distractions (Grandjean, Taylor, Weiner, 2002), injuries, critical feedback, making mistakes, and so on.

Thomas et al. (2011) identified six key characteristics of RSC; it is a strong set of beliefs, it is developed over time, and it is malleable, protective, durable, and multidimensional. In addition, it was suggested that RSC is a mental skill that should be developed and practiced continuously in order for it to remain stable. However, outside of Thomas et al's. (2011) study and a few others, little research has been conducted to further study this concept of RSC. For example, no research has been conducted to examine the factors associated with RSC.

To date, only one study has specifically delved into ways in which RSC may be developed and maintained through interventions. Beaumont, Maynard, & Butt's (2015)

qualitative study examined the practices sport psychology consultants used to develop and maintain RSC in their athlete clients. Results revealed that these practices included helping the athletes' understand and become aware of their confidence levels, developing athletes' strengths, manipulating the coaching environment, using psychological skills (i.e. imagery, goal setting), tailoring training to the individuals' needs, and logging evidence to keep track of their performance and thoughts (i.e. diaries, reflection). The consultants also revealed four main practices to help the athlete maintain their RSC, which include continuing to develop RSC, influence the athlete's environment, help the athlete create stable beliefs, and reinforce those beliefs. Although the results provided valuable information about how to create interventions to develop and maintain athlete RSC, the study did not examine factors within the athletes that may influence their RSC.

Of interest in the present study was what factors are associated with RSC in athletes, without being exclusive to those who received sport psychology consulting. In other words, the sample in the present study was inclusive to all collegiate athletes, whether they received help from a consultant or not. In addition, the Beaumont et al. (2015) study participants never specified the age group of the athletes the consultants helped, meaning their techniques were not generalized to collegiate athletes. The present study may aid our understanding of the factors can that influence the development and expression of RSC in to collegiate athletes.

No published literature has looked at the influences of RSC in collegiate athletes, but there is literature evaluating predictors of sources of self-confidence and sport confidence in collegiate athletes. Vealey and colleagues (1998), used Vealey's original sport confidence model to identify sources of sport confidence for general populations. With this information, Machida, Ward, & Vealey (2012) utilized Vealey's updated model (2001) as a framework to examine the possible antecedents of collegiate athletes' sources of confidence. Moreover, they looked at achievement goal orientation, perfectionism, and coach-induced motivational climate to examined the sources of sport confidence. Results suggested that the most important sources of sport confidence identified were social support, physical and mental preparation, coaches' leadership, mastery, and demonstration of ability. However, Machida et al. (2012) were evaluating sport confidence, as opposed to RSC. As stated, the main differences between sport confidence and RSC is that RSC is stable over time and can act as a barrier against daily fluctuations in confidence (Thomas et al. 2011).

The present study focused specifically on the sources of sport confidence and other factors that may associate with RSC in collegiate athletes, because these individuals are a part of a rather unique environment of balancing life, school, and sport, where they may be training to reach elite status. Life as a collegiate student athlete is very structured, controlled, and full of time constraints (Coakley, 2009). For instance, beyond taking required undergraduate coursework, athletes must regularly attend practice, study hall hours, and fulfill other requirements. On top of this, coaches control how much time athletes spend training and participating in other activities related to the team and their sport. All of these requirements create time constraints and special challenges that the athletes must face. In turn, these challenges could have an influence on their confidence.

As stated, RSC is a set of strong and enduring beliefs that may act as a barrier to the fluctuations in confidence that athletes face on a regular basis. This sort of protection can be crucial for collegiate athletes because RSC can be used throughout their lives in whatever career they choose. Because the present study evaluated the relationships between the sources of sport confidence, optimism, and RSC in collegiate athletes, the results will add to the existing research and understanding of how certain factors may influence confidence in collegiate athletes. The main purpose of this study was to examine 1) the relationships between various sources of sport confidence and robust sport confidence, 2) the relationship between optimism and robust sport confidence, and 3) the relationship between robust sport confidence and sport confidence-resilience.

Chapter 2

Review of Literature

In this chapter, the relevant literature related to this study is reviewed. First, the concept of self-efficacy is explored. Next, the review delves into the specifics of Vealey's sport confidence model, followed by a review of the literature concerning RSC, and constructs that may influence and are related to RSC.

Conceptual Approach to the Study of Sport Confidence

Self-Efficacy Theory

The most extensive and conceptually elegant approach to studying self-confidence is Bandura's self-efficacy theory (1977, 1986, 1997). According to Bandura (1997), self-efficacy refers to "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p.3). In other words, self-efficacy is one's belief in his or her abilities to successfully perform a task. It should be noted that the difference between self-efficacy and confidence is that self-efficacy is the belief in one's capabilities to perform a *specific* task as opposed to a group of tasks (such as in sports). Because self-efficacy includes physical capabilities, emotional states, and how the individual adjusts behaviors depending on changing environments, self-efficacy is a dynamic property that fluctuates over time. For example, any other day, a diver would believe that she can perform her best trick off the diving platform, but because she just missed her dive during warm-up, she feels anxious and worried, causing her self-efficacy to suffer. In addition, Bandura's self-efficacy theory is based on the social cognitive idea that individuals use self-regulation and self-reflection to shape their environment as opposed to simply reacting to it (Bandura, 1997).

A key point in Bandura's self-efficacy theory is that people's beliefs in their abilities and their perceived chances of successfully mastering and coping with fluctuating environmental challenges determine their engagement and persistence in performing tasks. In other words, if someone believes she has the ability to complete a task, she is more likely to persist until she has completed that task. Conversely, if she believes she is not capable of completing the task, she will be less likely to try as hard. When studying self-confidence in sport through a self-efficacy lens, though, confidence is not seen as a static and internal trait, nor is it a simple response to the environment. Instead, it is the main personal cognitive factor in the triadic reciprocal causation model of social cognitive theory, which states that behavior, personal factors, and environmental

events all mutually interact with one another. Because of this, in order to understand someone's behavior, one must also understand how the environment, the behavior, and the person are interacting with one another (Bandura, 1997).

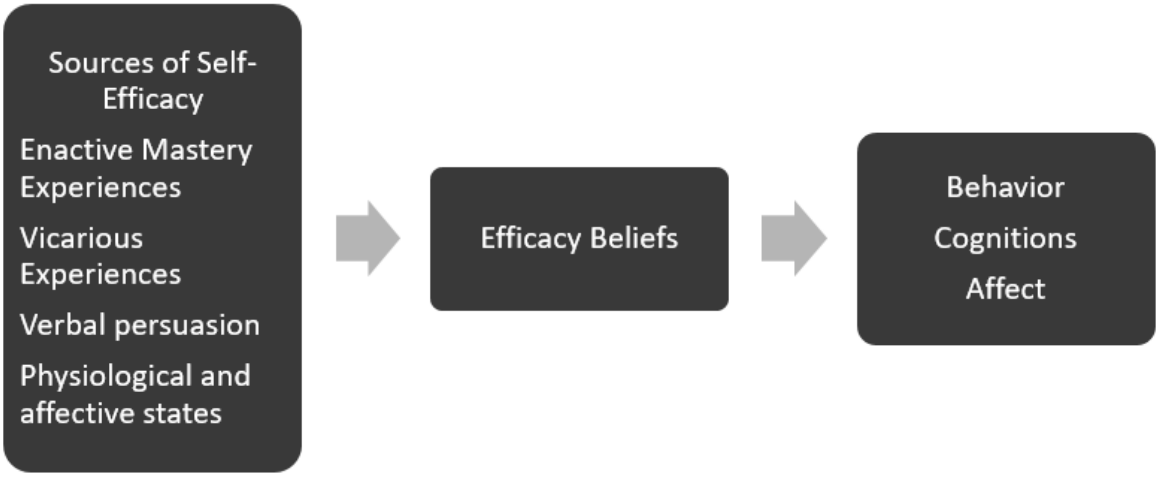


Figure 1: Theoretical model of self-efficacy

Sources of Self-Efficacy. Bandura (1986, 1997) also highlights four main sources of self-efficacy (Figure 1). The first source, known as enactive mastery experiences (or past performance) is based on one's past experiences in mastering a task or reflecting on past performances. Above all other sources, enactive mastery experiences are the most influential source of efficacy information, because these experiences provide concrete evidence that the athlete can succeed at a specific task (Feltz, 1988; McAuley 1985). Mastery experiences have also been shown to influence subsequent efficacy expectations as well as performance (Bandura, 1986; Feltz, 1994). The second source of self-efficacy, vicarious experiences, involves observing and comparing oneself to other's performance on a task. When an individual watches others perform a task, the individual creates expectancies of their own behaviors and abilities. For instance, when an athlete sees another with a similar level of expertise perform a task successfully, this can increase the athlete's self-efficacy and expectations. On the other hand, if they see their teammate fail, the athlete's efficacy may suffer. Studies have shown that coaches across cultures and level of competition occasionally use vicarious experiences as a means of

increasing their athletes' self-efficacy (i.e. Gould, Hodge, Peterson, & Giannini, 1989; Weinberg, Grove, & Jackson, 1992).

The third source of self-efficacy, verbal persuasion, refers to when significant others (i.e. coaches, peers, parents) express support and belief in an individual's capabilities, use persuasive techniques (encouragement) and provide feedback. According to Weinberg et al. (1992), American and Australian tennis coaches will use verbal persuasion more often than most self-efficacy enhancing techniques to build athlete self-efficacy. An important note to consider is how realistic the message is when persuading athletes. Chase, Lirgg, & Feltz (1997) suggest that verbal messages related to performance need to be realistic and the credibility and trustworthiness of the one sending the message will determine how influential the message is will be.

The final source of self-efficacy is physiological and affective states. Basically, an individual's self-efficacy is affected by how an individual mentally interprets his or her physiological and emotional condition at a particular moment. Because the athletes have direct physical connection to physiological states and emotions, athletes may use these more often than some of the other sources of self-efficacy. For instance, Chase, Feltz, Tully, & Lirgg (1994) found that physiological states were the second most selected sources of self-efficacy in female collegiate basketball players. Some of these physiological and affective states can include physical excitement, fear, stress, happiness, pain, and so on. According to Bandura (1997), negative emotions and unpleasant physiological states lead to lower self-efficacy, while the more positive emotions and feelings lead to increased self-efficacy.

Effects of self-efficacy. The right half of the theoretical model of self-efficacy (Figure 1) shows that self-efficacy beliefs can influence behavior, cognitions, and affect. In terms of behavior, self-efficacy can influence which activities and environments athletes choose participate in. This is because athletes will judge themselves and determine how capable they are of successfully performing the task(s). According to Bandura (1997), the higher the self-efficacy one has, the more likely they will choose more challenging tasks. Self-efficacy also influences persistence and how much effort one will allocate to complete the task. For example, a study using nearly one hundred collegiate football players found that there was a positive relationship between levels of self-efficacy and athlete effort during strength training sessions (Gilson, Reyes, & Curnock, 2012). Additionally, those with higher self-efficacy may put forth more effort and

persist than those with lower self-efficacy. When some people fail to meet their goals or some challenging standard they set, they become less confident in their efficacy and lower future goals, while those who remain confident and have higher self-efficacy continue to persist in their endeavors and may even raise their goals (Bandura & Locke, 2003).

Self-efficacy can also positively or negatively affect one's cognitions. Moreover, self-efficacy influences how an individual interprets and make sense of events that happen to them. Firstly, when someone has higher self-efficacy, they are more likely to set higher goals and commit more strongly to said goals (Vealey & Chase, 2008). Another way self-efficacy can affect cognitions is by how an individual attributes performance. Specifically, individuals with higher levels of self-efficacy will make attributions for successes and failures in a more productive manner (e.g. Courenya & McAuley, 1993; Shelton, 1990). For example, children who believed themselves to be more successful and possessed greater efficacy made more stable and controllable attributions for their performance (McAuley, Duncan, & McElroy, 1989). Lastly, those with higher levels of self-efficacy are more effective and efficient in problem solving and decision making. In a study using undergraduate and graduate students with at least a year of competitive basketball experience, results found that individuals with higher self-efficacy made better, faster, and more confident decisions than those with lower self-efficacy (Hepler, 2016). These results are in line with previous research regarding self-efficacy and decision making. According to Bandura and Jourden (1991), participants who had a decline in self-efficacy experienced erratic analytic thinking and were continuously self-critical of their performance. On the other hand, those with higher levels of self-efficacy also experienced an improvement in analytic thinking, specifically problem solving and decision making.

Lastly, self-efficacy beliefs have an influence on one's affective responses to situations because they affect whether they interpret these events in a positive, neutral, or negative manner (Bandura, 1997). In general, low self-efficacy will lead to more anxious and depressive responses, while high self-efficacy beliefs are predictive of more positive responses (Hanin, 2000). Finally, research has suggested a connection between differing levels of self-efficacy, confidence, and, consequently, performance based off an analysis of emotions and the Individual Zone of Optimal Functioning Model. More specifically, Hanin's (2000) analysis found that strong self-efficacy leads to feelings of confidence that are more facilitative to performance as it

relates to positive emotions. Unlike confidence, uncertainty (lack of confidence) is described as a negative emotional feeling that athletes believe is maladaptive to their performance.

Sport Confidence

Bandura's theory of self-efficacy provides valuable insights in how self-efficacy can positively influence behavior, yet his conceptualization does not fully capture how self-confidence ties into the complex context of competitive sports. Because of this, Vealey and colleagues developed a model that describes a conceptual framework in order to operationalize self-confidence that is specific to the context of competitive sport known as the sport-confidence model (Vealey 1986, 2001; Vealey, Hayashi, Garner-Holman, & Giacobbi 1998).

According to Vealey (1986), sport confidence refers to athletes' beliefs and degrees of certainty they possess about their abilities to be successful in their respective sports. In the original model, sport-confidence was based on a dispositional-state approach in which dispositional (trait) sport confidence interacts with certain situations to create state sport confidence. In addition, the model took into account athletes' competitive orientations, represented by performance orientation (performing well) and outcome orientation (winning) (Vealey, 1986). As time went on, it became clear that the model was missing vital information to further explain the complexity of how sport confidence influences affect, cognition, behavior, and therefore, performance. The model has since been revised to include the idea that sport-confidence is on a continuum from generalized to more specific sport confidence, along with sources and types of sport confidence.

Revised sport confidence model. According to Vealey and colleagues (Vealey, 2001; Vealey et al. 1998), there are multiple components to the current sport-confidence model (Figure 2). The first aspects to highlight are the factors that influence how one develops sport confidence, which includes demographic and personality characteristics as well as the organizational culture. In terms of sports, organizational culture refers to the cultural aspects of the sport subculture and how it is structured. Some of these cultural aspects can include the team motivational climate, coach and team expectations, cohesion, and so on. Personality and demographic characteristics can also affect how athletes' sport confidence develops. For example, gender is considered a factor to influence sport confidence. When looking at high school and collegiate athletes, male athletes seem to express higher levels of sport confidence than female athletes of the same expertise level (Vealey, 1988)**.** These are important to include in

the model because these factors can influence how athlete sport confidence manifests itself. More specifically, organizational culture and individual differences can decide what types of sport confidence athletes possess and where their sport confidence originates from (Vealey & Chase, 2008).

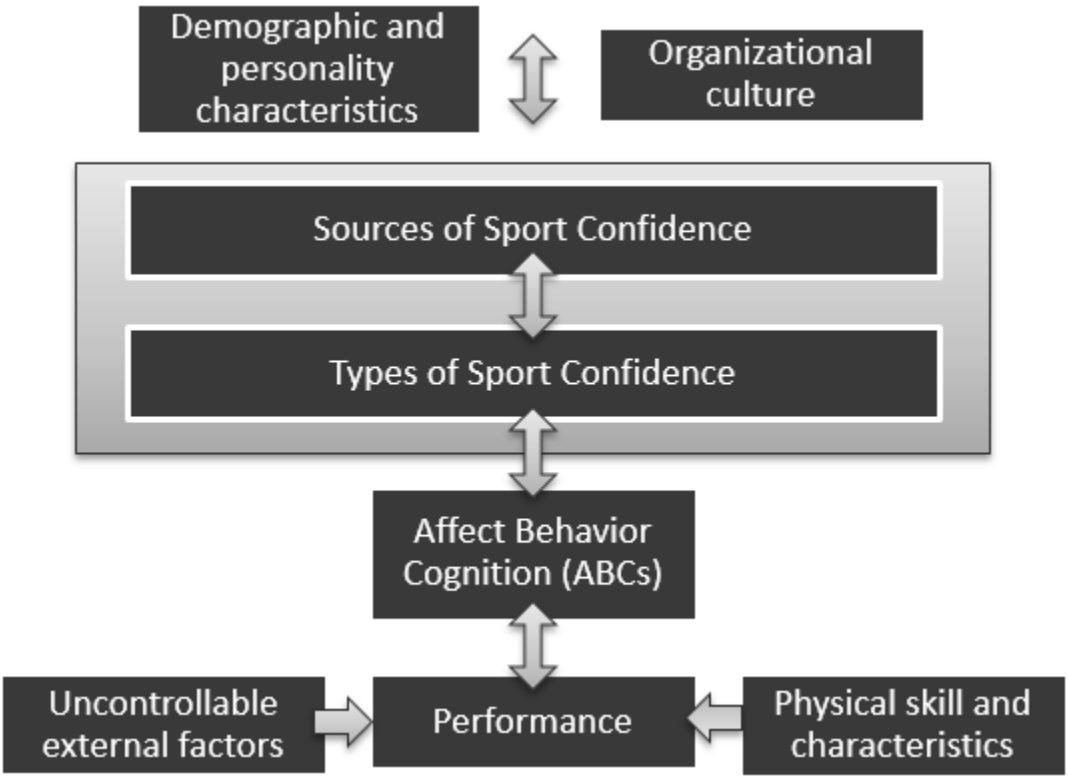


Figure 2: Sport-confidence model

Sources of sport confidence. The next section of the model to be discussed includes the sources of sport confidence. Vealey et al. (1998) identified nine different sources of sport confidence that are important for athletes within the context of sport. The first source, mastery, involves mastering and improving one's skills. The second source, demonstration of ability, on the other hand, refers to showing off one's skills and/or demonstrating having more ability than others. The third source, physical and mental preparation, has been shown to be vital to building competence and self-confidence in athletes (Gould, Hodge, Peterson, & Giannini, 1989; Williams, 1994). Compared to the other six sources of sport-confidence, mastery, demonstration of ability, and physical/mental preparations appear to be the most salient sources of sport

confidence for most athlete populations, such as master's athletes (Wilson, Sullivan, Myers, & Feltz, 2004), children and adolescents (Vealey, Chase, Magyar, & Galli, 2004), male and female, individual and team sports, high-school and collegiate (Vealey, et al., 1998), and athletes undergoing rehabilitation (Magyar & Duda, 2000).

The fourth source of sport confidence, physical self-presentation, involves how an individual perceives themselves or how they believe others perceive. Vealey et al's. (1998) results imply that physical self-presentation may be a more salient source of sport confidence in individual sports when the body type is more scrutinized (i.e. swimming, gymnastics, tennis). The next source of sport confidence is social support. This source is much like Bandura's verbal persuasion, but social support mostly refers to positive feedback, encouragement, and reinforcement one receives from significant others (i.e. coaches, parents) and friends. For instance, social support from significant others seems to be a valuable facilitator physical competence in youth populations (Harter, 1981; Horn & Weiss, 1991). In addition, research has shown that social support seems to be an important contributor to the confidence of world-class performers (Hays, Maynard, Thomas, & Bawden 2007).

The next source of sport confidence vicarious experiences, which are based on watching others perform successfully, much like Bandura's source of self-efficacy (Gould & Weiss, 1981; McAuley, 1985). A coach's leadership was identified as the seventh source of sport confidence based off open ended responses from 187 NCAA Division I collegiate athletes (Vealey et al., 1998). This source refers to athletes' belief in the coach's leadership and skills in decision making. In the Hays et al. (2007) study, the researchers found that the great majority of the world-class athletes agreed that the coaches and coaches' abilities were a valuable source of athlete confidence. The eighth source identified by Vealey et al. (1998), environmental comfort, refers to how comfortable athletes feel in competitive situations and environments. The final source, situational favorableness, is one of the more uncontrollable sources of sport confidence. This source refers to how much an athlete feels that the breaks in certain situations are happening in the athlete's favor. These situations can include referee calls against the opposing team, perfect weather, luck, and so on (Vealey et al. 1998).

It is no accident that the presented sources of sport confidence are closely related to Bandura's sources of self-efficacy. That being said, the sources of sport confidence are more relevant than Bandura's sources in the case of sports because Vealey and colleagues' nine

sources focus on the training and competitive environments of sport. Additionally, it is important to note that although there are nine sources of sport confidence, it does not mean that athletes will use every source to increase their sport confidence. As stated, demographic and personality characteristics and organizational culture determine where athletes' sport confidence comes from and how it manifests itself; Logically speaking, these factors will have an impact on which sources will build sport confidence more in athletes and which ones will not have as much of an impact. As stated prior, for example, mastery, demonstration of ability, and preparation seem to be the most salient sources of sport confidence for many athletes. Other sources, like physical self-presentation, may not serve as a valuable source of sport confidence, based on the athlete, the sport, and uncontrollable factors.

Types of sport confidence. The next section of the sport confidence model illustrates the three types of sport confidence identified by Vealey & Knight (2002). The first type is cognitive efficiency, which refers to the athletes' belief in their ability to make effective decisions and maintain focus and concentration in order to perform successfully in practice and competition. The next form of sport confidence, physical skills and training, is described as the athletes' beliefs and certainty in their physical ability to complete a physical task successfully. In other words, does the athlete feel like they have trained enough to perform well in the next competition. The final type of sport confidence is resilience, which refers to the athletes' belief and degree of certainty about whether they can bounce back after a bad performance, regain focus, and overcome any doubts and setbacks they may encounter so they may perform successfully. Vealey & Knight (2002) also found that the three forms have demonstrated to be differentially predictive of coping skills, competitive anxiety, and sport performance. These findings support the idea that sport confidence is also multidimensional.

***Sport confidence and ABCs*.** The next aspect to mention about the sport confidence model illustrated by Vealey & Chase (2008) is that athletes' sport confidence can influence performance, but only after the athletes' affect, behavior, and cognitions (ABCs) mediate that sport confidence. In addition, the model suggests that the relationship between sport confidence and an athletes' ABCs is actually bidirectional. In plain terms, this means one's feelings, thoughts, and behaviors can affect their sport confidence, and one's sport confidence can affect their feelings, thoughts, and behaviors. Because of this bidirectional relationship, ABCs and

sport confidence will constantly interact and influence one another, consequently affecting performance.

Firstly, when it comes to sport confidence and athletes' affect, research has shown that sport confidence is associated with pleasant emotions, while lower levels of confidence are more associated with unpleasant emotions (e.g. Hays, Thomas, Maynard, & Bawden, 2009). Furthermore, when an individual has both confidence and anxious feelings, athletes report still doing well while performing. On the other hand, those who have lower levels of confidence and high anxiety seem to experience decreases in performance. This suggests that levels of sport confidence can influence how individuals interpret their anxious feelings at competitions, whether they see it as facilitative or debilitative (Jones & Hanton, 2001).

Another relationship that Hays et al. (2009) found was that high levels of sport confidence are associated with an increase in productive achievement behaviors, exerting more effort in a task and persisting more to complete the task. This information makes sense when Bandura's theory of self-efficacy is considered. As explained previously, when athletes believe they have the ability and a reasonable chance of succeeding, they will set more challenging goals and exert more effort in order to complete the task (Bandura, 1997).

In regard to athletes' cognitions, Vealey (2001) explains how athletes who are more confident seem to be more skilled and efficient at utilizing cognitive resources and skills to succeed in their sport. For instance, athletes with higher levels of confidence in their sport are better able to cope with adverse situations. These individuals also reported being able to have a peak performance, even when under pressure because of their ability to cope during said adverse situations (Cresswell & Hodge, 2004). In another example, Hays et al. (2009) found that athletes who have higher levels of confidence are able to remain focused during competition, as well as have the appropriate focus, whether that be towards the task or the outcome. Athletes with low confidence, on the other hand, were not able to focus as well and were more likely to be distracted by negative thoughts.

Because sport confidence is not the only factor that can influence athletic performance, uncontrollable external factors as well as physical skill and characteristics are included in the sport confidence model, separate from the effects of sport confidence. For instance, an athlete can have high levels of sport confidence, but her performance can suffer if she is sick, there is less than favorable weather, or if she is not as fit of an athlete as her competition. With all the

information discussed, it is obvious how sport confidence can be important for athletes' performances, but Vealey & Chase (2008) also explain that possessing only sport confidence may not be enough. To become more successful in sport, athletes must pair that general sport confidence with an unshakeable form of sport confidence, known as robust sport confidence.

Robust Sport Confidence

Based on the information presented in the previous sections and the large number of factors discussed that can influence sport confidence, it is no wonder that athletes' confidence can be fragile and waver in the face of adversity. It should come as a relief to know that the growing knowledge of confidence in sport has shown that there seems to be a protective barrier against everyday occurrence that could negatively affect athletes' sport confidence, and can therefore, greatly influence performance. According to research, elite athletes have reported that having a resilient and robust confidence is a vital part of success as well as mental toughness (e.g. Bull, Shambrook, Brooks, 2005; Jones, Hanton, & Connaughton, 2007). In fact, robust confidence may be associated not only to higher levels of performance, but more successful performances over the long-term. As Bandura (1997) explains, athletes and performers who have fragile efficacy beliefs are more likely to fail due to becoming overwhelmed by the pressures of competition, while those with unshakeable and robust efficacy beliefs are more likely to remaining a top performer in their sport.

Through a review literature, one may notice that "resilient" and "robust" have been used interchangeably without much explanation as to how they are different. Unfortunately, this ambiguity in how to define these two concepts is present in recent confidence research, as Thomas et al. (2011) points out. To try and explain the current idea of resiliency, Galli and Vealey (2008) describe this construct as how athletes bounce back from bad performances and adversity as well as their positive responses to performance slumps and challenges. Regarding RSC, there was not much of a definition for this construct prior to the Thomas et al. (2011) study. At the time, resilience and robust confidence were used interchangeably, and any distinction between the two lacked clarity. Because of this, Thomas et al. (2011) developed a qualitative study in which they interviewed elite athletes to define RSC. As stated in previous sections, their findings resulted in RSC being defined as "a set of enduring, yet malleable positive beliefs that protect against the ongoing psychological and environmental challenges associated with competitive sport" (p. 202). Taking these conceptual definitions in account, the

main difference between resilience (not SCI-resilience) and robust confidence seems to be that resilience refers more to the behaviors of the athletes in the face of adversity while RSC is conceptualized as athletes' strong and unshakeable beliefs that act as a barrier to daily setbacks and/or blows to athletes' confidence. Because the conceptualizations of RSC and resilience are similar but different and they may be related to one another, the present study examined the relationship between sport confidence-resilience and RSC. Now that the basic concept of RSC has been clarified, it is necessary to explain its conceptualization and multidimensionality more in-depth. Much of the following information will come from the Thomas et al. (2011) study because each piece of the multidimensionality of RSC is clearly explained.

Characteristics of robust sport confidence. According to Thomas et al. (2011), both males and female participants defined RSC by six distinct characteristics. Firstly, RSC is characterized by its *durability*, meaning that RSC provides a stable and high level of confidence that seems to be resistant to change and remains the same over time. Secondly, qualitative results indicated that RSC is *multidimensional*. More specifically, RSC seems to be composed of a variety of types of sport confidence including "beliefs in their abilities, performance outcome, their physical and psychological preparation for a competitive event, equipment, physical appearance and being able to overcome setbacks or challenges" (p. 198). In addition, the athlete participants explained how certain facets of RSC may be more appropriate and facilitative than others, depending on the situation. For example, athletes' confidence in performing well might be best suited when competing, but when they experience injuries, it may be more facilitative to their RSC to have confidence in their rehabilitation and support network.

The third characteristic of RSC is that it is *malleable*. Malleability was also separated into three distinct themes: responsive, springy, and speed of recovery. Participants described RSC as being responsive because of its ability to respond and react to factors that could present themselves as threats to athletes' confidence. In terms of springy and the speed of recovery, RSC allows athletes to be able to bounce back quickly after setbacks they may experience on a regular basis. Fourthly, RSC includes a *strong set of beliefs*, which is in reference to the intensity of athletes' beliefs and how certain they are in their confidence. Specifically, results described this characteristic as including borderline arrogance and strongly held beliefs. Not to be mistaken by complete arrogance which can be fragile and temporary, borderline arrogance is described as athletes' belief in knowing they can perform a task well and be the best (Thomas et al., 2011).

The fifth dimension of RSC identified by all the study's participants is that RSC is *developed* over time (Thomas et al., 2011). It was pointed out, though, that even though RSC can grow stronger over time, it still requires some amount of "maintenance" (p. 201). Expanding on that notion, Beaumont et al., (2015), found that seasoned sport psychology consultants utilized several techniques to help athletes develop and maintain RSC, such as reinforcing athletes' abilities, continuing athletes' development of RSC, helping athletes create a set of stable beliefs, and so on. The final characteristic of RSC is that it is *protective*. The results of the Thomas et al. (2011) study is that RSC can also be described as "shock-absorbing", a "buffer" against factors that can be debilitative to athlete confidence, and a "protective layer". (p. 201). In other words, RSC protects athletes from factors that may negatively affect their confidence and provides a barrier that may lessen the negative effects of setbacks and performance slumps. For instance, a basketball player with high RSC misses a crucial free throw shot, but instead of feeling like he is not a good player (like someone with low RSC may believe), he realizes that missing shots happens to everyone and continues to play the game with the same passion he had before the shot.

Sources of confidence and RSC. As stated prior, little research has expanded on the idea of relationships between optimism, sources of sport confidence, and RSC, let alone evaluating RSC in collegiate athletes. Though this is the case, research has provided insights on what sources of confidence may be influential to athletes' RSC. For instance, a study by Hays et al. (2007) researched sources and types of confidence identified through semi-structured interviews of world class performers (a.k.a. Olympians, World Cup players, etc.). In addition to identifying sources of confidence used by these athletes and what types of confidence help enhance performance, Hays et al. (2007) concluded that athletes' deriving their confidence from several sources is important in developing RSC. In other words, for athletes to develop a strong and unshakeable RSC, they need to get base their confidence on multiple sources, not just one. This makes sense because if an athlete only has one or two sources of confidence, if those sources are no longer available, their confidence has no other sources to fall back on may diminish. For example, if track runner's confidence is only based his past performances and he is in a losing streak, his confidence may suffer. On the other hand, if another runner bases his confidence on their past performances as well as social support, a stable belief in his ability, and the effectiveness of the coach, then his confidence would be less likely to change after a bad

performance. An important distinction to make, though, is that multiple sources of confidence can help to develop RSC, but that is not to imply that all sources of confidence are sources of RSC.

Not only should athletes have multiple sources of confidence to develop RSC, but it may be most beneficial to the athlete if those sources are stable and controllable. According to Vealey et al. (1998), when athletes' confidence is based on more uncontrollable sources, then their confidence may suffer because perceptions of competence and control would be weaker. For instance, if a skier only feels confident only when the weather is ideal, then control his performance and feelings of competence are no controllable, making his confidence rather fleeting. On the other hand, controllable sources (i.e. mastery, preparation) are more adaptive towards the development of athlete confidence. With this in mind, Machida et al. (2012) suggests that athletes' perceptions of control in terms of sources of confidence is vital in order for the athletes to develop confidence. Because RSC is associated with durability, it is possible that individuals who possess higher levels of RSC may have developed those higher levels of RSC by utilizing more controllable sources as a foundation for their confidence.

Optimism and Sport Confidence

In addition to identifying sources of sport confidence that coincide with higher levels of RSC, the present study measured optimism, which could be related to and behave as a predictor to higher levels of RSC. According to Williams, Zinsser, & Bunker (2015), optimism is "the tendency to expect the best possible outcome or dwell on the most hopeful aspect of the situation" (p. 276). Some research has been conducted in order to find a link between athlete confidence and optimism, but little research has delved into optimism and RSC. Separate from Vealey's sport confidence model, a second conceptual approach to sport confidence was developed by Manzo, Silva, and Mink (2001). This approach defines sport confidence as a set of beliefs that comes from the interaction between athletes' dispositional optimism and sport competence. In short, they believed that dispositional optimism is important when understanding sport confidence because it can clarify why athletes believe in their sport competence regardless of the favorable and unfavorable performance conditions they may face.

Based on research from Scheier & Carver (1985, 1987, 1993), optimism helps to explain how one's perceptions of events can influence their thoughts, feelings, and behaviors. One way is when deciding whether attempting to attain a goal is futile or not, it is believed that optimistic

individuals are more likely than pessimists to believe that they can overcome those challenges. As stated prior by Bandura, those who believe their goals are attainable are more likely to persist until those goals are achieved. Therefore, since optimists are more likely to persist because they more often believe their goals are attainable, they achieve more successful outcomes than more pessimistic individuals (Scheier & Carver, 1985). Those who are more optimistic also believe they have more control of their future and future performances (Vealey & Perritt, 2015). When an individual has more pessimistic tendencies, on the other hand, they tend to expect the worst and believe performances are out of their control. An optimistic pole-vaulter may think about his upcoming jumps in a more positive light, believing that he will perform well, even if the competition conditions are less than favorable. On the other hand, the pessimistic pole-vaulter believes that he will fail, possibly due to a previous failure or unidealistic factors (i.e. weather, different venue).

Along with having more positive or more negative expectations of performance, optimists and pessimists have differing beliefs on why good and bad events happen. Firstly, individuals who tend to be more pessimistic are more likely to explain that bad events have global effects (will affect future performances), are stable over time (will happen predictably), and they happen because of internal causes with the failure being their fault. Furthermore, these individuals explain good events with external, specific, and unstable causes (happen due to luck) (Martin-Krumm, Sarazzin, Peterson, & Famose, 2003). Conversely, optimistic individuals believe that bad events occur because of external causes (non-ideal conditions), these events do not have global effects, and are unstable over time (happen randomly) (Beattie, Hardy, Savage, Woodman, & Callow, 2011; Peterson & Park, 1998). For example, instead of believing their most recent interception against his team was due to a lack of talent and will lead to more failures, an optimistic quarterback may believe that interceptions happen to most quarterbacks and the opponent made a good catch. The study results also found that optimists attribute bad events to external causes, they are more likely to have stable beliefs over time.

Compared to pessimists, optimists may experience less severe and fewer setbacks following failures as well as additional benefits. For instance, Martin-Krumm et al. (2003) found that more optimistic participants had increased levels of self-confidence and lower levels of anxiety, which in turn contributed to greater protection against adversity. A second finding was that the optimistic participants also performed better during the second task after receiving

failure feedback than the more pessimistic participants. Manzo et al. (2001) included optimism in their conceptualization of sport confidence because of the idea that some athletes are able to believe in their abilities despite previous successes or failures. Based on the previous discussion, this may be because optimistic athletes are better able to attribute their failures to external unstable factors (higher skilled opponents) as opposed to internal and stable factors (lack of talent). Furthermore, when presented with challenges, optimists engage in coping strategies that involve positive thinking, make the best of the situation, and believe that solutions to their concerns exist. These thought processes enable optimists to have more solution focused thoughts and behaviors (Scheier & Carver, 1987).

With this research in mind, there are a couple of important points to keep in mind regarding optimism, such as being cautious about the relationship between optimism and performance. For instance, one concern is the idea of being overly optimistic. Being overly optimistic, or having positive illusions about one's skill and control, can lead an individual to making poor decisions. Kirschenbaum, O'Connor, and Owens (1999) found that on more challenging holes, experienced golfers' performance suffered because they were too optimistic and decided to use too aggressive of a shot. Another concern that needs to be addressed is that belief that optimism will lead to large increases in performance. Though there is considerable research that supports the benefits of optimism on performance, Tenney, Logg and Moore (2015) found that people may be too optimistic about how much optimism can help, much like being overly optimistic about one's skill and control. These researchers conclude that as important as optimism can be to benefit one's performance, it will not always improve one's performance. A final point to make about optimism is that it is seen as a stable personality characteristic. According to research (Scheier & Carver, 1992; Seligman, 1991), one's optimism is developed throughout their childhood and is relatively stable over time. Luckily, though, there are implications that optimism can be improved in adulthood to some degree (Williams et al., 2015).

Even though research has suggested that optimism may be improved in adulthood, this does not take away the importance of developing one's optimism during childhood. The present study observed whether there is a relationship between collegiate athletes' RSC and optimism. If the results suggest there is a positive relationship, then this further emphasizes the need to facilitate development of optimism during an individual's childhood and adulthood, if needed, regardless of whether or not they become athletes.

The purposes of the study were to examine (a) the relationships between the sources of sport-confidence and RSC, (b) the relationship between optimism and RSC, and (c) the relationship between sport-confidence resilience and RSC. Because of the exploratory nature of the study due to the small amount of research on RSC, there were no formal hypotheses for the present study. Considering previous research in the sport confidence and RSC, though, it was believed that some sources of sport confidence would be associated with higher levels of RSC, specifically sources that are more controllable (e.g., mastery, physical and mental preparation) and/or stable (e.g. coach's leadership, social support). Additionally, it was believed that optimism would be positively related to RSC.

Chapter 3

Method

Participants

The study included 236 collegiate athletes (104 males; 115 females; 17 unknown) ranging from 18-25 years of age, and were in their first (65), second (67), third (55), fourth (38), or in their fifth year of college or in graduate school (11). There was a little diversity between the athletes, including White (202), African American (20), Hispanic (6), Asian (3), Pacific Islander (1), and Other (4). These athletes were from multiple NCAA Division universities across the United States (231 Division I athletes; 4 Division II athletes; 1 Division III athlete). Additionally, these athletes competed in a wide array of sports, including track and field and/or cross country (67), baseball (33), basketball (5), diving (10), field hockey (6), football (18), golf (4), synchronized skating (18), volleyball (15), swimming (29), softball (17), soccer (8), other (6) Because the present study was used to identify factors that may have associate with RSC in collegiate athletes and does not specify any demographic requirements, it was important to gather information from collegiate athletes who compete in all three NCAA Divisions and across multiple universities so the results may generalize to the majority of student-athlete populations.

In regard to the number of participants, the study included 236 collegiate athletes because previous quantitative studies that identified sources of confidence (i.e. self-confidence, sport confidence) gathered data from a large number of participants. This large number was necessary to be able to generalize findings to populations outside of their studies. For example, in Vealey et al. (1998) study to identify sources of sport confidence, the three phases that involved collecting data from athletes included one-hundred and thirty-seven (Phase 2), one-hundred and eighty-seven (Phase 3), and two-hundred and six (Phase 4) athletes. In a more recent study that involved identifying the predictors of sources of self-confidence in collegiate athletes, the researchers gathered data from two-hundred and six collegiate athletes. This study was inclusive to collegiate athletes competing in multiple NCAA Divisions (Machida et al., 2012), which is important because the present study will include collegiate athletes as well.

Measures

In order to begin to identify the relationships between optimism, the sources of sport confidence, and RSC in collegiate athletes, the present study utilized multiple questionnaires. These questionnaires included the Trait Robustness of Self-Confidence Inventory (TROSCI), the

Sport Confidence Inventory (SCI), the Sources of Sport Confidence Questionnaire (SSCQ), and the Revised Life Orientation Test (LOT-R) (See Appendices F-I). A set of demographic questions was asked as well regarding gender, age, race, university/college they attend, the sport(s) they currently participate in, years of experience in their sport(s), and year in school (Appendix E). Lastly, two open-ended response questions were included so participants have an opportunity to provide information about sources and predictors of RSC they may experience (Appendix J). The questions asked "What helps you to remain confident over time? Briefly explain in a few words using the space below", and "What helps you to remain confident in the face of adversity? Briefly explain in a few words using the space below." A second benefit to including open-ended questions is that it will help future research by introducing potential predictors of RSC that may not have been previously considered.

Trait Robustness of Self-Confidence Inventory. (TROSCI; Beattie et al., 2011). The TROSCI is a trait measure that assesses the robustness of self-confidence beliefs in the context of sport and consists of eight items, with no separate subscales. Each of the items is measured using a Likert-type scale, with 1 being "strongly disagree" and 9 being "strongly agree", where participants respond to what extend they agree or disagree with the presented statement. Standard anti social-desirability instructions help to encourage participants to respond honestly. Example items include "My self-confidence is stable; it does not vary very much at all" and "My confidence goes up and down a lot." Validation for the TROSCI was calculated by using over 400 athletes, confirming satisfactory test-retest reliability, predictive validity, internal consistency, and convergent validity (Beattie et al., 2011).

An analysis of the eight TROSCI items utilizing 286 of the athletes resulted in a mean total score of 35.50, a standard deviation of 10.82, and an internal consistency of .83. In the second phase of the study, results found internal consistency of the TROSCI was α=.88. Secondly, using a two-factor model which tested the TROSCI and the Trait Sport Confidence Inventory (TSCI) revealed a .44 correlation between the two factors. No items were cross-loaded. These results demonstrate good structural validity for the TROSCI as well as convergent validity. In the third phase, test-retest reliability resulted in high interclass correlation (α=.90). Additionally, predictive validity calculations show that athletes with robust confidence beliefs are more resilient to adversity and poor performance than those without robust confidence beliefs, and the TROSCI is a good fit for both males and females.

Sources of Sport Confidence Questionnaire. (SSCQ; Vealey et al., 1998). The SSCQ assesses athletes' sources of sport-confidence. This questionnaire consists of a total of 41 items that represent the nine sources of sport confidence: mastery (five items), demonstration of ability (five items), mental and physical preparation (six items), physical self-preparation (three items), social support (six items), coach's leadership (five items), vicarious experiences (five items), environmental comfort (three items), and situational favorableness (three items). Each item assesses how important each source is to the participant in the sport context. To answer the questions, participants respond to the stem "I gain self-confidence in my sport when I… on a Likert scale with 1 being "not important at all" and 7 being "of highest importance." Example of items include "psych myself up" (mental and physical preparation), "watch another athlete I admire perform successfully" (vicarious experiences), and "show I'm one of the best in my sport" (demonstration of ability).

To score each source, items for source are summed and divided by the number or items for each source. For example, to score Social Support, responses from the 6 items are summed, and divided by 6. Vealey et al. (1998) established initial support for content and construct validity for high school and collegiate athletes. Additionally, internal consistency was calculated for each subscale, all of which exceeded Cronbach's alpha criterion of α=.70, meeting the standards advocated by Nunnally (1978). In terms of item descriptive stats, means for each subscale ranged between 3.25 (Physical self-presentation) and 5.60 (Mastery), with significant gender differences between demonstration of ability and social support.

Revised Life Orientation Test (LOT-R; Scheier, Carver, & Bridges, 1994). The LOT-R is a 10-item scale that has been used to measure the two subscales optimism and pessimism. The LOT-R uses a 5-point Likert scale with 0 being "I disagree a lot" and 4 being "I agree a lot." The items reflect either an optimistic or pessimistic outlook. Each subscale is measured by summing the three positively and the three negatively worded items. Four filler questions are included in the ten items that are unrelated to the measure. Upon completion, the results of each subscale range between 0-12, with the higher scores being related to a higher level of optimism or pessimism. The total optimism score is calculated by reverse-scoring the pessimism items and adding them to the scores of the optimism items. Example items include "If something can go wrong for me, it will" (pessimism item), "I'm always optimistic about my future" (optimism item), and "It's important for me to keep busy" (filler item). Scheier et al. (1994) validated the

LOT-R by using 2,055 undergraduate students to show an acceptable level of internal consistency, Cronbach's alpha (α=.78), as well as demonstrating predictive and discriminative validity.

Sport Confidence Inventory (SCI; Vealey & Knight, 2003). The SCI assesses how much sport confidence the athlete has. The questionnaire consists of fourteen items rated on a 7-point Likert scale, with 1 being "can't do it at all", and 7 being "totally certain". Additionally, the questionnaire contains 3 subscales: SC-Physical Skills and Training, SC-Cognitive Efficiency, SC-Resilience. An example of Physical Skills and Training would be "you can execute the physical skills necessary to succeed. An example item for Cognitive Efficiency would be "you can keep mentally focused throughout the competitive event. Lastly, an example of Resilience would be "you can regain your mental focus after a performance error". Total scores for each subscale illustrate the types of sport confidence utilized most by the athlete. Total score for sport confidence is obtained by adding all the items together, and illustrates athletes' level of sport confidence.

Reliability and validity of the SCI is supported by Vealey and Knight (2003). The third phase of the study testing reliability of the three subscales resulted in Cronbach's alpha coefficients all being above .84, meeting the standard of internal consistency (Nunnally, 1978). Intercorrelations between the three subscales ranged between .53 and .56. Test-retest reliability was assessed, resulting in reliability coefficients being .73 (SC-Physical Skills and Training), .78 (SC-Cognitive Efficiency), .78 (SC-Resilience), and .80 (SC-Total). The presented results show that the SCI demonstrates adequate variability, internal consistency, and reliability. Finally, the results Phase four shows that the SCI demonstrates some construct validity, specifically that different types of confidence can predict performance in a variety of competitive situations.

Procedure

Participants were recruited from collegiate athletic teams at universities in the United States, primarily from Miami University due to availability. The present study used a single time data collection method. Participants from Miami University were given access to the survey through two methods: in-person team meetings and/or online links. In order to distribute the questionnaires in person, coaches of Miami University teams were contacted via emails and/or phone in which the head researcher requested to have meetings with the athletes so they may complete the questionnaires while the researcher is with them. For the athletic teams that gave

approval, the researcher met with the teams at their main practice venue before or after practices. The primary researcher gave a brief overview of the study and consent form (Appendix A & C). After giving consent, the participants then fill out the surveys. Once completed, the primary researcher gave a short debriefing regarding the nature of the study (Appendix K). Finally, the researcher asked for the participants to provide the researcher contact information if they would like to know the results of the study once concluded.

If participants chose the online option, they completed an online copy of the survey that was created through a university-approved online survey tool. Online links to the surveys were distributed via email individually to athletes at Miami University as well as other universities (Appendix B). Student emails were found in university directories. Links to the online questionnaires were also distributed through social media. Participants from other universities only received online surveys either through email or social media due to availability. In terms of the survey information, like the hard copies, participants were provided a consent form that gave a brief description of the study and survey instructions (Appendix D). Once the athletes selected the option giving consent to use the data, they proceeded to fill out the surveys. After the questionnaires were completed, the website gave a short debriefing about the study (Appendix L). The survey website also sent out an email with the same information as the debriefing and gave the participants the option to contact the primary researcher if they would like to know the results of the study, once concluded.

Chapter 4

Results

Descriptive Analyses

Data analysis was conducted to analyze the descriptive statistics of each of the inventories. Additionally, correlational analyses were conducted to evaluate the relationships between trait robust sport-confidence, optimism, the sources of sport confidence, and sport confidence-resilience. The lower portion of Table 1 includes means, standard deviations, and reliability of each inventory and subscale. All measures had adequate internal consistency (Cronbach's $\alpha>70$; Nunnally, 1978), save for the SSCQ subscale, Situational Favorableness ($\alpha=.67$).

Descriptive statistics and reliability tests were run for three versions of the TROSCI utilized in the present study: an original version of the TROSCI ($M=38.88$; $SD=10.74$; $\alpha=.84$), a modified version of the TROSCI ($M=38.25$; $SD=11.01$; $\alpha=.78$), and a version which includes only the first seven items ($M=34.11$; $SD=9.52$; $\alpha=.78$). Due to a discrepancy between the original version of the TROSCI scale (includes a copied item) and the modified TROSCI scale (includes the corrected item), a version of the TROSCI which only included the first seven items out of the original 8-item scale was scored as well. To make sure that the 7-item version of TROSCI was sufficient for analysis, reliability testing as well as correlational analyses were conducted between the original version of the TROSCI scale, the modified version, and the first seven items. As shown in Table 1, results indicate that utilizing the 7-item version of the TROSCI was a sufficient measure of trait RSC.

One of the aims of the study was to evaluate the relationship between trait RSC and the nine sources of sport confidence. Specifically, correlational analyses were conducted between the 7-item TROSCI and each subscale of the Sources of Sport Confidence Questionnaire, as illustrated in Table 1. Three of the nine sources (Preparation, Coach leadership, and Vicarious experience) were insignificantly correlated with RSC ($p>.05$). The remaining six sources (Mastery, Social support, Demonstration of ability, Environmental comfort, Situational favorableness, and Self-presentation) were negatively correlated with trait RSC. Significance ($p=.01$) and higher correlations were shown between RSC and Social support ($r=-.23$), Demonstration of ability ($r=.22$), and Self-presentation ($r=.22$).

Table 1: Intercorrelations Between All Inventories and Subscales

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. TROSCI 7 questions	-																
2. TROSCI original	.99**	-															
3. TROSCI correct	.99**	-	-														
4. SSCQ- Mastery	-.02	-.03	-.01	-													
5. SSCQ- Social Support	-.23**	-.28**	-.15	.40**	-												
6. SSCQ- Preparation	.11	.07	.16	.49**	.37**	-											
7. SSCQ- Coach Leadership	.05	.08	-.06	.23**	.45**	.33**	-										
8. SSCQ- Dem. Of Ability	-.22**	-.29**	-.22*	.27**	.29**	.15*	.12	-									
9. SSCQ- Vicarious Experience	.08	-.00	.18	.34**	.31**	.49**	.33**	.15*	-								
10. SSCQ- Environment Comfort	-.06	-.08	-.03	.26**	.37**	.34**	.14*	.23**	.37**	-							
11. SSCQ- Situational Favorableness	-.13	-.18*	-.06	.42**	.36**	.20**	.10	.38**	.34**	.37**	-						
12. SSCQ- Self-Presentation	-.22**	-.26**	-.17	.34**	.44**	.25**	.18**	.31**	.26**	.38**	.38**	-					
13. R-LOT	.38**	.48**	.25*	.06	.01	.12	.02	-.11	.05	.05	-.06	-.04	-				
14. SCI Total	.39**	.43**	.35**	.24**	.05	.40**	.13	-.02	.21**	-.01	.08	-.05	.41**	-			
15. SCI Physical	.20**	.25**	.19	.18*	.04	.31**	.16*	.04	.16*	.01	.07	-.08	.33**	.80**	-		
16. SCI Cognitive	.35**	.40**	.33**	.22**	.03	.39**	.09	-.03	.19**	-.05	.04	.00	.35**	.91**	.59**	-	
17. SCI Resilience	.44**	.49**	.400**	.25**	.03	.33**	.10	-.08	.20**	.01	.06	-.06	.37**	.88**	.50**	.79**	-
Cronbach's Alpha	.78	.84	.78	.85	.79	.89	.90	.89	.84	.90	.67	.88	.75	.92	.85	.83	.89
Mean	34.11	38.88	38.25	27.62	34.09	34.15	27.02	26.87	14.29	22.97	12.03	15.40	15.22	77.28	28.40	27.71	21.28
Standard Deviation	9.52	10.74	11.01	4.80	4.82	5.56	5.37	5.85	4.48	6.35	3.96	3.78	3.90	10.40	3.86	4.10	4.03

Note. **. Correlation is significant at the 0.01 level (2-tailed); *. Correlation is significant at the 0.05 level (2-tailed); TROSCI. Trait Robust Self-Confidence Inventory; SSCQ. Sources of Sport Confidence Questionnaire; R-LOT. Revised Life Orientation Test; SCI. Sport Confidence Inventory.

These results suggest that the more trait RSC an athlete has, the less important social support, demonstration of ability, and self-presentation are for the athlete to feel confident. With this information in mind, though, analysis revealed that there were low effect sizes within these significantly correlated factors. In other words, the negative relationships between RSC and Social support, Demonstration of ability, and Self-presentation, only explained about 4% of the variance in the study.

Another aim of the present study was to evaluate the relationship between RSC and optimism. A significant, positive correlation was found between athletes' optimism and trait robust sport-confidence (r=.38; p=.01), which can be shown in Table 1. Results suggest that optimism is moderately associated with trait robust sport-confidence. In other words, the more optimism an athlete has, the more trait robust sport-confidence an athlete may develop.

The final aim of the present study was to evaluate the relationship between TROSCI scores and and SCI-resilience in order to demonstrate that these may be similar, but are still different constructs. Results would also reveal whether the TROSCI is a sufficient measure of RSC or not. Results indicate that there is a significant positive relationship between RSC and sport confidence-resilience (r=.44; p=.01). These results suggest that sport confidence-resilience and RSC are moderately related, but are still separate constructs.

Open-Ended Response Analysis

As can be seen, in Appendix J, the survey distributed to the collegiate athletes included two open-ended questions asking what help them to remain confident over time and what helps them to remain confident in the face of adversity. Individual responses to each question were recorded into a Microsoft Excel spreadsheet. Next, individual responses were coded separately by the researcher and by Dr. Robin Vealey using thematic analysis. According to Glesne (2011), thematic analysis is when the researcher is searching for patterns and themes, which is the essence of coding and analyzing data. One of the important aspects of thematic analysis is separating the data into categories by using codes, and then analyzing the clumped coded data. Once responses were coded individually, both parties met up and discussed their findings. Results indicated the factors which help them to have more RSC. After analyzing and coding the responses, a number of themes and subthemes were identified in the data using in vivo coding. According to Creswell (2007), a slice of data should be named should come from the data themselves. In the present study, the names of the main themes and subthemes were created

using the language used by the athletes. Main themes that were identified include *Social Support, Past Success, Consistency, Preparation, Belief, Mental Strategies*, *Faith*, *Trust*, and *Motivation*.

Social Support. One theme that was identified was *Social Support*. This main theme can be described as how collegiate athletes are able to remain confident in the face of adversity or over time and have stronger RSC when they feel like they have the support of others, specifically family, coaches, teammates, and/or friends. Four subthemes arose from the main theme as well, including *other's support, other's confidence, other's encouragement,* and *positive/constructive feedback*. For example, an athlete response that highlights *other's support* would be:

> *"Support from friends, family, coaches, and teammates is always what keeps me confident especially when I am struggling."*

An example of a response which demonstrates *other's confidence* would be when a collegiate athlete was talking about the importance of other peoples' confidence in them:

> *"One major key for me is having a support system of people who believe in me. Confidence in your own abilities is going to waiver at times, but having people around you who have the utmost confidence in you no matter what help keep your confidence at the highest level possible. This system of support must be in with you for the long haul."*

As for the remaining subthemes, the statements relating to *other's encouragement* and *positive feedback* were straightforward, such as "positive feedback", "getting encouragement from others", and similar statements.

Past Success. A second main theme identified was *Past Success*, which was described as athletes' recalling previous good performances, successes, and so on. Subthemes that came from the data include *improvement, performance in practices/meets, good performances,* and *overcome previously*. Firstly, *improvement*, which was identified as positive changes in performance, was found as a predictor of RSC for athletes. Many statements were straightforward like "improving", and some were longer, such as when athletes talked about their improvement over time. For instance, a figure skater said "remembering […] how far I've come since I was three years old" helps her to feel confident over time.

Performance in practices/meets was also identified under the *Past Success* umbrella. Many of the response were simplistic (i.e. "good performance", "success in practice"), but some were a little more expansive. For instance, one of the participants expressed how remembering when they performed well in practice helped them to remain confident over time:

"What helps me remain confident is reflecting back on past experiences and convincing myself that I am capable of greatness in competition based on what I've shown in practice."

Additionally, multiple athletes stated how performing in meets helps them to remain confident as well. Specifically, one athlete mentioned:

"Remembering meets and races where I have performed well and focusing on those ` rather than focusing on my poor performances."

The final subtheme identified, *overcome previously*, falls under *Past Success* because it alludes to athletes having been successful in previous situations and they believe they can succeed again. For instance, an athlete stated how adversity had led to their best performances:

"I think about the times that I have overcome adversity and how those performances were typically my best."

Additionally, another athlete responded by talking about them and others overcoming adversity:

"Thinking of others and what they've overcome, thinking of the other things that I've overcomed already."

Due to the nature of the subtheme, it should be noted that the majority of the responses pertaining to *overcome previously* were in response to the question regarding confidence in the face of adversity. That being said, as stated in the Methods section, the two questions pertain to the two aspects of RSC. Because of this, even if the questions were combined, it is believed that athlete responses alluding to overcoming adversity would have arisen regardless. This is also the case in the sub-themes yet to be discussed, specifically *acceptance of adversity*

Consistency. The third main theme that came from the data was *Consistency* which, in the case of the athlete responses, is described as being able to perform well in meets, training, etc. consecutively. Being able to consistently perform well over time makes sense in regard to RSC because a main aspect of RSC is having confidence over time. An example of an athlete response regarding *Consistency* explains consistency in competitions:

"Performing well in multiple and consecutive events also boosts my confidence."

Another example alludes to *Consistency* in practice:

"What helps me remain confident over time is performing consistently in training. I make sure that I perform my best every day in practice because if I don't, I will dwell on mistakes that I made for too long."

As a final note, unlike the other themes, *Consistency* was the only main theme that was not separated by subthemes.

Preparation. The fourth main theme that was analyzed from the data was *Preparation* which was described as the amount of preparation that the athlete put into training to prepare for competitions. In this case, collegiate athletes may have more RSC when they put in the appropriate amount of preparation. Preparation was split into subthemes *hard work/work ethic, effort,* and *time. Hard work/work ethic* was one of the more common subthemes, as it was alluded to throughout the dataset. For instance, an athlete describes working hard at practice is what helps them to remain confident:

> *"[…] my hard work. If I know I give my best at practice and in training then I know that everything will come together with time and more practice, leading me to success."*

In regard to *work ethic* specifically, all the responses simply state "work ethic" with not much additional explanation.

Effort was another theme that came up several times. Though it is related to hard work/work ethic, it was mostly referring to giving maximum effort or doing everything the athlete could do to succeed. For instance, an athlete explains how giving full effort helps him to feel confident over time:

> "*Giving it my all. So even if my actual skill wasn't there I didn't stop trying and I gave 110%. If the efforts there the skill will shortly follow."*

Lastly, *time* was identified as a subtheme of *Preparation.* All of the athlete responses were simply "time" or "putting in the time" with little further explanation.

Belief. Another main theme that was identified was the athletes' Belief, which generally referred to what the athletes believed in. Specifically, athletes seemed to believe in the *self, in abilities*, and *in preparation*. *In self* was a subtheme which encompassed responses such as "believing in myself", "self-belief", believing in a personal characteristic they possess (i.e. mentally tough, strong), and skills.

Belief *in abilities* was another common sub-theme that presented itself throughout the data. This subtheme is related to believing they are capable of succeeding, having good performances, and they are a good athlete. For example, one athlete explains how believing in their abilities helps them stay confident while facing adversity:

"What helps me remain confident is […] convincing myself that I am capable of greatness in competition based on what I've shown in practice. Knowing that I am capable of more gives me confidence and motivation to overcome a bad performance."

Lastly, data analysis resulted in the sub-theme of belief *in preparation*, which was described as believing in the work they put in or in their preparation. An athlete response which demonstrated this *in preparation*, while tying into i*n self*:

"If I put in the work and do everything I can in order to do good I'm good."

Mental Strategies. The *Mental Strategies* theme can be described as the strategies the strategies the athletes utilize to have more robust confidence. Because of the nature of the main theme, *Mental Strategies* is a broader theme in that it encompasses more sub-themes than the others. These sub-themes include *physical, focus, visualization, optimism/positivity, perspective, affirmations, acceptance of adversity,* and *separating self and performance*. Firstly, *physical* refers to the physical sensations that help athletes remain confident. The athlete responses given allude to being physically calm and included responses such as "staying calm" as well as "deep breathing".

The second sub-theme is *focus,* in which the athletes indicated the importance of having the appropriate focus (i.e. "on the task at hand", "big picture", "locked in"). An "appropriate focus" that appeared many times was focusing on the controllables in a situation. One of the athlete response illustrates how focusing on controllables helps them remain confident when faced with adversity:

"Remaining confident in the face of adversity is all about focusing on what you can control. I am 100% confident that I can control the things I need to and then the results are out of your hand. For instance, I know I can control my alignment, tempo, breathing, and mentality. I can't control my score, swing, pace of play, or my opponents so I must not waste valuable mental energy worrying about things out of my power."

Though *visualization* was identified as a third sub-theme, the athlete responses recorded did not expand on what the athletes were visualizing. Results indicate though, that visualizing can be valuable to having RSC. Similarly, *optimism/positivity* did not result in more elaborate athlete responses, though it may be important as well.

The fifth sub-theme suggests that maintaining *perspective* may help collegiate athletes to have more robust confidence. Athletes maintained productive perspectives by stating that "it

happens to everyone," "I have overcome this before," "it's okay to make mistakes," "it happens for a reason," "everyone has to have a bad day sometimes", and related statements.

Acceptance of adversity, which refers to the collegiate athlete's ability to accept that they will face adversity, was identified as the next sub-theme of *Mental Skills.* This sub-theme seems like a combination between *perspective* and *focus* (specifically controllables) because the athlete accepts that they cannot control the adversity they face and they change perspective and accept the adversity. One way was that the athletes accepted that adversity is inevitable when trying to become great. Another example of acceptance is when one of the athletes responds by stating that they stay confident in the face of adversity by:

> *"Rolling with the punches. Not everything will go your way and you have to expect and accept that".*

Responses also indicated that acceptance can go a step farther and see adversity as an opportunity. Specifically, adversity could provide the opportunity to become stronger or a better athlete:

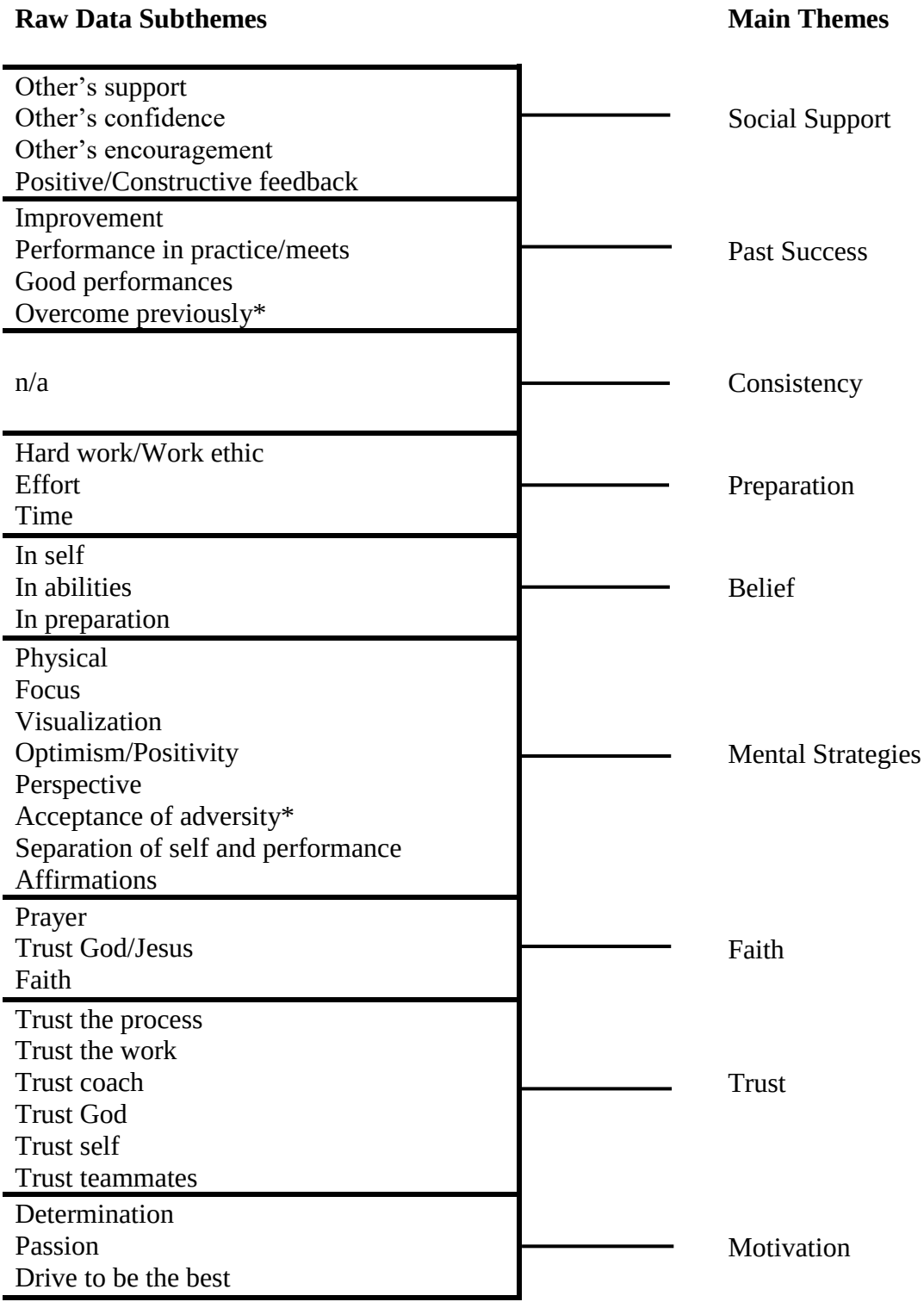
> *"I don't fold under pressure. Pressure make Diamond. Great player make great plays under major pressure."*

The seventh sub-theme *separation of self and performance*, is basically the athlete's ability to separate one's worth or their skill from their performance. In other words, a bad performance does not make one a failure or does not define who the athlete is. For example, one athlete explains this separation when answering the question regarding what helps them to remain confident over time:

> *"Compartmentalizing my sport from the rest of my life. My performance in the pool doesn't define my performance as a human being."*

The final sub-theme identified was *affirmations*, or the short statements athletes tell themselves to help them to remain confident over time or in the face of adversity Sometimes those affirmations were statements the athletes said to themselves, and sometimes the affirmations were said to the athlete by others. For example, one athlete stated that they are able to remain confident over time by:

> *"Using 'I am' statements. Telling myself that I am confident and that I am a champion. Self-assurance and knowing that I will succeed."*



Note. *. Responses found in open-ended question regarding remaining confident in the face of adversity.

Figure 3. Themes and subthemes for factors that help the collegiate athletes to remain confident over time and in the face of adversity.

Faith. A seventh main theme that arose from the data was *Faith*. This main theme is most associated with religion or using religious beliefs to help the athlete to remain confident. With this, a few subthemes were identified as facets of *Faith*, including *prayer, trust God/Jesus,* and *faith.* Statements regarding *prayer* simply said that praying helped them remain confident. Athlete responses pertaining to *trusting in God,* mostly relate to athletes trusting that God has a plan for them or will take care of them. Additionally, statements related to *having faith* were very similar to *trusting in God* statements. For instance, one athlete stated:

> *"Faith, trusting in God. Confidence is something I can't do alone so I'm currently working on trusting God and meeting him half way in order to develop it."*

Another example of a response that highlights these *Faith* subthemes as well as additional subthemes from other main themes was:

> *"That I believe in a God who is always with me and his plans are greater than my own. That God calls us to remain joyful during trials and keep faith. Those who go through more pain and difficult times are typically more dedicated, successful, and smart competitors."*

Trust. The second to last main theme identified, *Trust,* was described as the athlete having trust in something or someone outside besides themselves, which in turn, helps them to remain confident. Additionally, athlete responses revealed a number of subthemes, including *trust the process, trust the work, trust coach, trust God, trust self,* and *trust teammates.* Each of these subthemes were identified through simple self-explanatory athlete responses regarding the subthemes (i.e. "trust my teammates and coach", "trust the process", "trust in training").

Motivation. The final main theme which came from athlete responses has to do with the athletes' *Motivation.* Specifically, athletes discussed using their *determination, passion,* and *drive to be the best.* All of the identified subthemes were presented by the athletes with mostly straightforward responses such as "my determination to be the best," "my determination" and so on. Occasionally, athletes gave more elaborate responses. For instance, athletes talked about remembering their passion and why they love their sport:

> *"In the face of adversity I remind myself why I like this sport. Reminding myself why I like this sport helps me to refocus and gain perspective. I swim best when I am happy, so reminding myself why I like the sport allows me to focus on the little things that make me happy."*

A second example of an athlete discussing passion would be:

> *"Often times realizing why I fell in love with my sport in the first place allows me to become more confident at large swim meets and competition. Furthermore, realizing I'm surrounded by positive, good people allows me to relax and perform better."*

Chapter 5

Discussion

The purpose of the present study was to (a) examine the relationship between RSC and the nine sources of sport confidence identified by the *Sport-Confidence Model* (Vealey, 1998; Vealey & Chase, 2008), and (b) examine the relationship between RSC and optimism. Additionally, the open-ended questions regarding two key aspects of RSC were utilized in order to identify potential predictors of RSC of collegiate athletes without the constraints of inventory questions. The secondary aim of the study was to compare RSC and sport-confidence resilience. Reliability tests revealed that all of the inventories and subscales seemed to be a good fit for the population utilized in the study, save for the SSCQ subscale, Situational Favorableness, potentially due to the low number of items used to score this subscale. Though the present study was conducted to identify sources of RSC in collegiate athletes, it was also one of the first studies to attempt to examine interrelationships between RSC and other psychological constructs.

As stated, the first purpose of the study was to examine the relationship between RSC and the nine sources of sport confidence. According to correlational analyses, none of the nine sources were strongly related to RSC in collegiate athletes. Three sources, though, specifically Social Support, Demonstration of Ability, and Self-presentation, shared mild negative relationships with RSC. These results suggest that the more RSC and athlete has, the less importance they place on social support, demonstration of ability, and self-presentation for them to feel confident in their sport. This makes sense because the more robust confidence an athlete has, the less they rely on others' support, winning, or how they look in order to feel and remain confident. Additionally, this makes sense because these three sources are considered to be uncontrollable sources, but it should be noted they are not the only uncontrollable sources in the *Sport-Confidence Model*. Based on the descriptive statistics, none of the other sources of sport confidence share a relationship with RSC in collegiate athletes. It should be kept in mind, as stated previously, that these negative correlations between RSC and the three sources of sport confidence only explain 4% of the variance.

It is interesting that there does not seem to be any positive relationships between the sources of sport confidence and RSC in collegiate athletes, even the more controllable sources (i.e. Mastery, Physical/Mental Preparation). These results are contrary to conclusions suggested by Vealey (1998) which state that using more controllable sources is more adaptive to

confidence development than uncontrollable sources. Additionally, it is strange that only a third of the sources had any kind of relationship with RSC, and those relationships were low. One explanation for these results could have been because of the wording of the questions in the SSCQ inventory. As stated in the instructions, "circle the number which indicates how important that is in helping you feel confident in your sport". The questions ask how *important* is each source for the athlete to feel confident. Instead, the questions could have been worded to ask which sources they *use the most* to feel confident. Asking the question in this fashion could have made more sense because if collegiate athletes use certain sources more than others, then they may use those sources so they remain confident in the long run. Ergo, this would indicate the sources of sport confidence may have a positive relationship with RSC. This could explain why there were very few notable relationships between the nine sources of sport confidence and RSC.

The second purpose of the study was to examine the relationship between RSC and optimism to see if optimism behaves as a predictor of RSC. Results indicate a moderate positive relationship between the two constructs. More specifically, the more optimism a collegiate athlete possesses, the more likely they are to have more RSC, or vice versa. Though this was the first study to look at RSC and optimism, these results are supported by previous research regarding confidence and optimism, specifically the Manzo et al. (2001) study, which suggested a positive link between general confidence and optimism. These results further suggest that optimism not only plays a factor in general confidence, but also shares a relationship with RSC. Therefore, developing optimism, either in childhood or as an adult, can be an important factor in the development of RSC in collegiate athletes.

Now that results regarding sources of sport confidence and optimism have been discussed, it is necessary to discuss the results presented by the open-ended response. Based on athlete responses, factors that help collegiate athletes to have RSC include social support, past successes, consistency, preparation, belief, mental strategies, faith, trust, and motivation. It seems that in order to remain confident over time and in the face of adversity, collegiate athletes use mostly factors that are psychological in nature (i.e. belief, mental strategies, faith, trust, motivation) and factors that are within the athletes' control (i.e. preparation, past successes, consistency), as opposed to external and uncontrollable factors, except for social support. The results did not include a tally of how many responeses matched with themes and subthemes, but the main themes and subthemes presented are based on multiple athlete responses instead of

single responses. In other words, multiple athletes found these themes and subthemes to help them to remain confident over time and in the face of adversity. It should also be kept in mind that not every athlete used all the factors presented by the results. Because of this, some factors may be more helpful for certain collegiate athletes than others. Therefore, determining appropriate factors to use for collegiate athletes should be individualized. Sport psychologists and consultants should keep these main themes and subthemes in mind so they may help atheltes to use different combinations of factors so they may develop or maintain RSC.

It should be noted that the most common main themes given by the collegiate athletes seemed to be social support, past successes, belief, and the various forms of mental strategies. One may recall the previous discussion of results regarding SSCQ and TROSCI, and how Social Support was negatively related to RSC. When analyzing the data, it is interesting how athlete responses from the open-ended questions regarding social support contradict the negative relationship found in the corrlational analyses. The fact that social support was a common athlete response in the open-ended questions creates a discrepancy between the athlete responses in the open-ended questions and the SSCQ inventory. This discrepancy could have been due to the wording of the open-ended questions or perhaps the SSCQ instruction wording, which will be mentioned further in the discussion.

As stated previously, *Past Success* was one of the most common predictor given by the collegiate athletes in their open-ended responses. In other words, past success was one of the strongest predictors of RSC (according to the open-ended questions) for collegiate athletes. This means that collegiate athletes who remain confident in the face of adversity and over time are able to do so because they make a point to recall their previous successes and accomplishments. These findings are supported by previous research regarding confidence and past successes (or mastery experiences). Bandura (1986, 1997) found enactive mastery expeirences to be a major source of self-efficacy. In addition, previous research suggests these experiences are the most influential source of self-efficacy, because these experiences give the athlete direct evidence that they can succeed at a given task (Feltz, 1988; McAuley 1985). With this information in mind, it is understandable and unsurprising that many collegiate athletes would identify their past success as a means to remain confident over time and in the face of adversity. Because collegiate athletes are faced with many competitions and many opponents, they are faced with much adversity.

These results suggest that the athletes reminding themselves of their past accomplishments and successes may be important if they want to have strong confidence, or RSC.

Collegiate athletes' *Belief* also seemed to be a very common predictor of RSC as given by the open-ended questions. The fact that belief was a common predictor of RSC was not surprising, considering the fact that RSC, general confidence, or self-efficacy is based on one's beliefs (Bandura, 1986; Vealey 1986; Thomas et al. 2011). In regards to defining RSC, Thomas and collegeaues (2011) emphasize the athletes' beliefs and how strong those beliefs are. Throughout the open-ended data, collegiate athletes described that having a strong belief in themselves helped them to remain confident over time and in the face of adversity.. Additionally, the responses indicate that collegiate athletes may have RSC because they believe, not just in themselves, but in other factors as well, specifically their preparation and in their abilities. These findings are supported by the study which first defined RSC (Thomas et al., 2011). Specifically, one of the characteristics of RSC is its multidimensionality, or that it is comprised of multiple sets of beliefs, such as their overall abilities, performance outcome, their physical and psychological preparation, equipment, and ability to overcome setbacks or challenges. Therefore, it is suggested that a predictor of RSC in collegiate is having a strong belief in oneself as well as other factors, including their preparation and in their abilities.

The use of mental strategies was a final, very common predictor of RSC in collegiate athletes, as was found by the open-ended responses. Among the strategies identified by the raw data include having the appropriate focus, visualization (or imagery), being optimistic, having an appropriate perspective, acceptance, separating self (or self-worth) and performance, and being phsyically ready (relaxed/calm). Previous research with RSC has suggested that some of these mental strategies are used in order to develop RSC in athletes, such has having the appropriate focus, imagery, reframing restructuring (similar to perspective) (Beaumont et al., 2015). The present study results suggest that the use of mental strategies is an important predictor of RSC in collegiate athletes. That being said, there are multiple other forms of mental strategies that were not mentioned by the athletes (i.e. goal setting), so the list of mental strategies presented by the data is not exhaustive. In addition, not every mental strategy was utilized by every collegiate athlete for them to have RSC. This may suggest that when sport psychologists and sport psychology consultants teach mental strategies to collegiate athletes, it is important to tailor the interventions for each athlete, because certain mental strategies may work better for some

athletes than others. This is not new information though, and an abundance of mental strategies intervention research has shown how mental strategies may be effective in enhancing athlete performance. The responses in the present study, though, specifically emphasize the importance of using mental strategies, not only to enhance performance, but to enhance or retain RSC in collegiate athletes.

Finally, the secondary aim of the study was to evaluate the relationship between sport confidence-resilience and the RSC. These analyses were conducted in order to make sure that sport confidence-resilience and RSC are related but they are not exactly the same.. This distinction was important because the two constructs are similar in nature, but RSC and the sport confidence-resilience should not be fully correlated. In addition it was necessary to compare because the TROSCI is not specifically a RSC inventory, but an inventory used to measure robust *self-confidence* in a sport setting. The results from the present study show that RSC and sport confidence-resilience are indeed, moderately related (similar), but not completely the same construct. Additionally, this shows that the TROSCI was an adequate measure of RSC. Finally, athletes who have higher RSC may exhibit resilient sport confidence as well.

Though the study brought some interesting and useful information relating to predictors of RSC, there were a few limitations that need to be addressed. Although a goal of the study was to be able to generalize results to collegiate athletes in all NCAA Divisions and across a variety of ethnicities, one of the limitations of the study, due to convenience, was that most of the collegiate athletes were white and competed for Division I universities and colleges. In addition, though the athletes competed across a wide range of sports, there were some sports (i.e. cross country and track) which had more representation in the results. Because of this, it is unknown that the study would be generalizable to the population of collegiate athletes across the United States. That being said, a strength of present the study was its large number of participants, which means the results may be generalizable to collegiate athletes to a certain degree.

A second limitation of the present study involves the use of the TROSCI. During the data collection process, a mistake involving one of the 8 items in the TROSCI was identified. To remedy the mistake, a corrected copy of the TROSCI was created and given to collegiate athletes who had not yet completed the survey. When data collection was completed, it was noted that there was a larger number of the original surveys completed than the corrected surveys. It was decided that utilizing only the first 7 items of the TROSCI was sufficient for analyzing

correlations between variables of interest, because analysis showed that using a 7-item TROSCI was highly correlated with the both 8-item versions as seen in Table 1. Though using the 7-items was sufficient for data analyses, this could have had some effect on the results because it was one less item than the original TROSCI.

Another limitation of the study is simply that the research could not infer causation between the correlations. Just because there is a positive or negative relationship between variables, does not mean that one variable causes the presence of the other. For instance, it is unknown if emphasizing more importance on social support for confidence causes lower RSC, or if this is a coincidence. Additionally, the directionality of the relationship cannot be assumed. In other words, though there was a positive relationship between RSC and optimism, it is unknown whether higher optimism leads to higher RSC, or higher RSC leads to higher optimism.

The final limitation of the present study was the fact that the TROSCI is technically a trait robustness of *self-confidence* inventory, as opposed to *sport confidence*. Though, it can be said that the inventory measures robust confidence in sport settings, and Robinston and Freeston (2015) used the TROSCI as a measure of RSC. Additionally, due to the fact that the TROSCI was originally created using athletes, the instructions and items are geared towards sports and competition (Beattie et al., 2011). Finally, due to the secondary aim of the study, it was found that SCI-resilience scores were moderately related to the TROSCI scores. Because of this relationship and the previous information, it can be argued that using the TROSCI in the present study was a sufficent measure of RSC. That being said, should there be more research regarding RSC, there will be a need to create a RSC specific questionnaire, so research results used to further enhance our understanding of RSC may not be scrutinized.

The present study's results may pave the way for future research when looking at RSC. Firstly, as stated, it would be beneficial to create a RSC specific inventory. So far, most of the research regarding RSC has been comprised of qualitative data. Because of this, creating a inventory that specifically measures RSC may help to introduce more quantitative research regarding athlete RSC. More importantly, though, there is a need for more research regarding RSC in general. RSC was only recently conceptually defined and there is little research which delves into this construct. Having a better understanding of this construct and its affect on athlete performance is important because, as previous research states (Thomas et al., 2011; Beaumont et al., 2015), RSC may be stronger and more stable than general confidence, which can be more

influential in athletic performance and success in over longer periods of time. The more sport psychologists and consultants know about RSC, the more successful they may be in developing and maintaining RSC in their athlete clientel.

Secondly, the data collected from the open-ended questions show that there may be more predictors of RSC in collegiate athletes than the nine sources of sport confidence. A number of the predictors of RSC identified in the open-ended questions did match up with Vealey's sources of sport confidence (i.e. past success, social support) but there were also new predictors presented by the athletes that may be more specific to RSC (i.e. consistency, trust, specific mental strategies). With this in mind, research should continue to search for additional predictors of sport confidence as well as RSC. Additionally, not all sources were used by every athlete which means that combinations of factors that help the athletes to have RSC may be unique to each athlete. If sport psychologists and consultants have a better understanding of factors that may predict higher levels of RSC, they may be able to individualize their intervention programs to better fit their athlete so their athlete may develop stronger RSC.

A third implication for future research involves optimism's influence on RSC or vice versa. The present research as well as previous research has shown that there does seem to be a moderate relationship between optimism and different forms of confidence. The amount of research exploring this relationship is still lacking, and researcherss so far have not made exploring the relationship between optimism and confidence as the main objectives of their research. Research has shown there is a relationship, but current knowledge does not extend much further than that, so it is not understood as to why this relationship occurs. In terms of RSC, if future research further solidifies the notion that optimism and RSC are related, then this information further emphasizes the importance of developing optimism during one's childhood or as an adult.

In conclusion, the present study examined the relationships between RSC, the nine sources of sport confidence (Vealey et al. 1998), optimism, and sport confidence-resilience. Quantitative results indicate that few sources of sport confidence share a relationship with RSC; specifically, social support, demonstration of ability, and self-presentation act are negatively related to RSC in collegiate athletes. Optimism, though, according to both open-ended and quantitative results, shares a positive relationship with RSC in this population of athletes. Open-ended responses showed that there are many controllable psychological factors that help athletes

maintain their RSC. Finally, it was found that RSC and sport confidence-resilience scores were moderately and positively related. The present study has brought further understanding of the nature of RSC and what factors predict RSC in collegiate athletes.

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Appendix A

Pre-Questionnaire Information In-Person Script

"Hello everyone and thank you for your time. My name is Deanna Morrison, and I'm a graduate student in the Kinesiology and Health Department at Miami University. I am here (contacting you) to ask if you would fill out a set of questions for my thesis regarding confidence and collegiate athletes. Your participation is completely voluntary, so you may withdraw at any point with no penalty. Because of the target group we are looking for, we ask that no one under the age of 18 fill out the surveys. Please read through the consent form, and if you agree with the terms, please sign (or click the button) at the bottom. When answering the questions, please answer them as honestly as you can and do not spend too much time on any one question. Answering all the questions should take about 15 minutes. If you have any questions, please feel free to ask me or email me at morrisdk@miamioh.edu."

Appendix B

Pre-Questionnaire Online Information Script

"Hello everyone and thank you for your time. My name is Deanna Morrison, and I'm a graduate student in the Kinesiology and Health Department at Miami University. I am contacting you to ask if you would fill out a set of questions for my thesis regarding confidence and collegiate athletes. Your participation is completely voluntary, so you may withdraw at any point with no penalty. Because of the target group we are looking for, we ask that no one under the age of 18 fill out the surveys. Please read through the consent form, and if you agree with the terms, please click the button at the bottom. When answering the questions, please answer them as honestly as you can and do not spend too much time on any one question. Answering all the questions should take about 15 minutes. If you have any questions, please feel free to ask me or email me at morrisdk@miamioh.edu."

Appendix C

In-Person Consent Form

Confidence in Collegiate Athletes

You are invited to participate in a research project being conducted by Deanna Morrison and Dr. Robin Vealey from the Kinesiology and Health Department at Miami University. The purpose of this research is to examine sources of confidence in collegiate athletes. Participation in this research is restricted to persons 18 years of age or older.

The survey should take about 15 minutes. Your participation is voluntary, you may skip questions you do not want to answer, and you may stop at any time. The survey will not ask for information about your identity. If you inadvertently include identifying information, such information will be removed from any stored data. Only the research team will have access to individual responses. Results of the research will be presented publicly only as aggregate summaries.

If you have any questions about this research or you feel you need more information to complete this survey, you can contact me at morrisdk@miamioh.edu. If you have questions or concerns about the rights of research subjects, you may contact our reviewing body: Research Ethics and Integrity Office at Miami University at (513) 529-3600 or humansubjects@miamioh.edu.

Please keep a copy of this information for future reference.

_____

Participant Signature

_____

Date

Appendix D

Online Consent Form

Confidence in Collegiate Athletes

You are invited to participate in a research project being conducted by Deanna Morrison and Dr. Robin Vealey from the Kinesiology and Health Department at Miami University. The purpose of this research is to examine sources of confidence in collegiate athletes. Invitations to complete this online survey have been sent by email to about 200 people. In addition, open invitations have been posted on social networking sites such as Facebook and Twitter. Participation in this research is restricted to persons 18 years of age or older.

Completing the survey should take about 15 minutes. Your participation is voluntary, you may skip questions you do not want to answer, and you may stop at any time. The survey does not request information that would explicitly identify you. If you inadvertently include identifying information, such information will be removed from stored data. Only the researchers will have access to individual responses. Results of the survey will only be presented publicly as aggregate summaries.

If you would like to receive a report of the general results of this project please click on the link at the end of the survey which will take you to a separate form to send us your contact information.

The research survey and the contact survey are not linked.

If you have any questions about this research or you feel you need more information to complete this survey, you can contact the lead researcher at morrisdk@miamioh.edu

If you have questions or concerns about the rights of research subjects, you may contact our reviewing body: the Research Ethics and Integrity Office at Miami University at (513) 529-3600 or humansubjects@miamioh.edu.

---- Thank you for your participation, Deanna Morrison.

Click here to proceed to the survey

Appendix E

Demographic and Background Information

1. What is your sex/gender? Male Female Other

2. Age _____

3. Race/ Ethnicity: African American Hispanic Native American Asian
   Pacific Islander White Other: _____

4. Year in School (circle): Freshmen Sophomore Junior
   Senior 5th year or Graduate

5. Current College/University: _____

6. Which NCAA Division does your current university/college belong to (circle)?
   Division I Division II Division III Not sure

7. Sport(s) you currently participate in: _____

8. Is your sport in the in-season or off-season? Please specify for each sport if you participate in multiple.

   _____

9. Years of experience in current sport(s). Specify how many years of experience you have in each sport, if multiple:

   _____

Appendix F

Trait Robustness of Self-Confidence Inventory Questions

Think about your confidence and how your performance may affect your confidence generally.

The statements below describe how you may feel ***generally*** about your confidence, answer each statement by circling the number that corresponds to how you strongly agree or disagree **generally**. Please answer the items as honestly and accurately as possible, there are no right or wrong answers.

*Note: The term ***competition*** refers to matches, tournaments, or other competitive events.

Question	**Strongly Disagree**				**Neutral**				**Strongly Agree**
1. A bad result in competition has a very negative effect on my self-confidence.	1	2	3	4	5	6	7	8	9
2. My self-confidence goes up and down a lot.	1	2	3	4	5	6	7	8	9
3. Negative feedback from others does not affect my level of self-confidence.	1	2	3	4	5	6	7	8	9
4. If I perform poorly, my confidence is not badly affected.	1	2	3	4	5	6	7	8	9
5. My self-confidence is stable; it does not vary very much at all.	1	2	3	4	5	6	7	8	9
6. My self-confidence is not greatly affected by the outcome of competition.	1	2	3	4	5	6	7	8	9
7. If I make a mistake it has quite a large detrimental effect on my self-confidence.	1	2	3	4	5	6	7	8	9
8. My self-confidence remains stable regardless of fluctuations in fitness levels.	1	2	3	4	5	6	7	8	9

Appendix G

Sources of Sport Confidence Questionnaire Questions

Think back to times when you felt **very confident** when participating in your sport. **What things made you feel confident?** What things helped you believe in your abilities and gave you confidence that you would be successful?

Listed below are some things that may help athletes feel confident in sport situations. For each statement, circle the number which indicates **HOW IMPORTANT THAT IS IN HELPING YOU FEEL CONFIDENT IN YOUR SPORT**. Please respond to every question even though they may seem repetitive. There are no right or wrong answers because every athlete is different. Please be honest - your answers will be kept completely confidential.

I gain confidence in my sport when I…

	Not at all important	**Not very important**	**Slightly unimportant**	**Of average importance**	**Slightly important**	**Very important**	**Of highest importance**
1. Get positive feedback from teammates and/or friends	1	2	3	4	5	6	7
2. Keep my focus on the task	1	2	3	4	5	6	7
3. Psych myself up	1	2	3	4	5	6	7
4. Master a new skill in my sport	1	2	3	4	5	6	7
5. Get breaks from officials or referees	1	2	3	4	5	6	7
6. Perform in an environment (gym, pool, stadium, etc.) that I like and in which I feel comfortable	1	2	3	4	5	6	7
7. Feel good about my weight	1	2	3	4	5	6	7
8. Believe in my coach's abilities	1	2	3	4	5	6	7
9. Know I have support from others that are important to me	1	2	3	4	5	6	7
10. Demonstrate that I am better than others	1	2	3	4	5	6	7

11. See successful performances by other athletes	1	2	3	4	5	6	7
12. Know that I am mentally prepared for the situation	1	2	3	4	5	6	7
13. Improve my performance on a skill in my sport	1	2	3	4	5	6	7
14. See the breaks are going my way	1	2	3	4	5	6	7
15. Feel I look good	1	2	3	4	5	6	7
16. Know my coach will make good decisions	1	2	3	4	5	6	7
17. Am told that others believe in me and my athletes	1	2	3	4	5	6	7
18. Show my ability by winning or placing	1	2	3	4	5	6	7
19. Watch other athletes I admire perform successfully	1	2	3	4	5	6	7
20. Stay focused on my goals.	1	2	3	4	5	6	7

I gain confidence in my sport when I…

	Not at all important	**Not very important**	**Slightly un-important**	**Of average importance**	**Slightly important**	**Very important**	**Of highest importance**
21. Improve my skills	1	2	3	4	5	6	7
22. Feel comfortable in the environment (gym, pool, stadium, etc.) in which I'm performing	1	2	3	4	5	6	7
23. Feel that everything is "going right" for me in that situation	1	2	3	4	5	6	7
24. Feel my body looks good	1	2	3	4	5	6	7
25. Know my coach is a good teacher	1	2	3	4	5	6	7
26. Am encouraged by coaches and/or family	1	2	3	4	5	6	7

27. Know I can outperform opponents	1	2	3	4	5	6	7
28. Watch a teammate perform well	1	2	3	4	5	6	7
29. Prepare myself physically and mentally for a situation	1	2	3	4	5	6	7
30. Increase the number of skills I can perform	1	2	3	4	5	6	7
31. Like the environment where I am performing	1	2	3	4	5	6	7
32. Have trust in my coach's decisions	1	2	3	4	5	6	7
33. Get positive feedback from coaches and/or family	1	2	3	4	5	6	7
34. Prove that I am better than my opponents	1	2	3	4	5	6	7
35. See a friend perform successfully	1	2	3	4	5	6	7
36. Believe in my ability to give maximum effort to succeed	1	2	3	4	5	6	7
37. Receive support and encouragement from others	1	2	3	4	5	6	7
38. Show I'm one of the best in my sport	1	2	3	4	5	6	7
39. Watch teammates who are at my level perform well	1	2	3	4	5	6	7
40. Develop new skills and improve	1	2	3	4	5	6	7
41. Feel my coach provides effective leadership	1	2	3	4	5	6	7

Appendix H

Revised Life Orientation Test Questions

Instructions: Please answer the following questions about yourself by indicating the extent of your agreement using the following scale. Please be as honest and accurate as you can, there are no "correct" or "incorrect" answers. Answer according to your own feelings, rather than how you think "most people" would answer. Your responses will remain confidential.

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. In uncertain times, I usually expect the best	0	1	2	3	4
2. It's easy for me to relax	0	1	2	3	4
3. If something can go wrong for me, it will	0	1	2	3	4
4. I'm usually optimistic about my future	0	1	2	3	4
5. I enjoy my friends a lot.	0	1	2	3	4
6. It's important for me to keep busy.	0	1	2	3	4
7. I hardly ever expect things to go my way.	0	1	2	3	4
8. I don't get upset too easily.	0	1	2	3	4
9. I rarely count on good things happening to me.	0	1	2	3	4
10. Overall, I expect more good things to happen to me than bad.	0	1	2	3	4

Appendix I

Sport Confidence Inventory

Respond to each item based on how you **TYPICALLY FEEL** about your abilities in your sport.

Read each item and **circle the number** that represents **HOW CERTAIN YOU FEEL** that you can do what is described in that item.

Keep in mind that 7 and 1 represent **absolute levels** in which you are totally certain that you can do this or absolutely sure that you cannot.

Your answers will be kept strictly confidential. Please answer as **you really feel** being totally honest (as opposed to answering as you would LIKE to feel or think that you are SUPPOSED to feel). All athletes are different in their abilities, and **there are no right or wrong responses**.

How certain are you that…

	Can't do it at all	Very uncertain	Fairly uncertain	Maybe I can	Fairly certain	Very certain	Totally certain
1. You can **execute the physical skills** necessary to succeed?	1	2	3	4	5	6	7
2. You can keep **mentally focused** throughout the competitive event	1	2	3	4	5	6	7
3. You can **bounce back** from performing poorly to successfully execute your skills?	1	2	3	4	5	6	7
4. Your **physical training** has **prepared** you enough to succeed?	1	2	3	4	5	6	7
5. You can successfully **make critical decisions** during competition?	1	2	3	4	5	6	7
6. You can **regain your mental focus** after a performance error?	1	2	3	4	5	6	7
7. Your **physical fitness level** will allow you to compete successfully?	1	2	3	4	5	6	7
8. You can effectively **use strategy** needed to succeed?	1	2	3	4	5	6	7

9. You can **overcome doubt** after a poor performance?	1	2	3	4	5	6	7
10. You can successfully **perform the physical skills** required in your sport?	1	2	3	4	5	6	7
11. You can **maintain the mental focus** needed to perform successfully?	1	2	3	4	5	6	7
12. You can **overcome problems and setbacks** to perform successfully?	1	2	3	4	5	6	7
13. You have the **physical preparation** that is needed to compete successfully?	1	2	3	4	5	6	7
14. You can successfully **manage your nervousness** so that it doesn't hurt your performance?	1	2	3	4	5	6	7

Appendix J

Open-Ended Questions

1. What helps you to remain confident over time? Briefly explain in a few words using the space below.

_____

2. What helps you to remain confident in the face of adversity and challenges? Briefly explain in a few words using the space below.

_____

Appendix K

In-Person Post-Survey Debriefing Script

Thank you for your participation in this research about the predictors of robust sport confidence in collegiate athletes. Your help is greatly appreciated.

If you have any questions about this research or you feel you need more information, you can contact me at morrisdk@miamioh.edu. If you have questions or concerns about the rights of research subjects, you may contact our reviewing body: Research Ethics and Integrity Office at Miami University at (513) 529-3600 or humansubjects@miamioh.edu.

If you would like to receive a summary of the results please provide the primary investigator your contact information. The research survey and the contact information form will not be linked therefore the research data will remain as anonymous as you provided it.

Appendix L

Online Post-Survey Debriefing Information

Thank you for your participation in this research about the predictors of robust sport confidence in collegiate athletes. Your help is greatly appreciated.

If you have any questions about this research or you feel you need more information, you can contact me at morrisdk@miamioh.edu. If you have questions or concerns about the rights of research subjects, you may contact our reviewing body: Research Ethics and Integrity Office at Miami University at (513) 529-3600 or humansubjects@miamioh.edu.

If you would like to receive the results of the study following its completion please email morrisdk@miaimoh.edu. The research survey and the contact information form will not be linked therefore the research data will remain as anonymous as you provided it.