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The Effect of Psychological Skills Training on Elite Youth Baseball Hitting Performance

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By

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Abstract

Psychological skills training continues to grow in popularity amongst athletes and coaches of various levels. However, there is still a lack of research in different populations on the benefits of psychological skills training. The purpose of this study was to examine the effects of a psychological skills training program on the hitting performance and Athletic Coping Skills Inventory-28 of elite youth baseball players.

A total of 27 participants completed a baseline, pre-test, and post-test hitting test along with pre-test and post-test ACSI-28 measures. A 6-month follow up ACSI-28 and focus group was conducted with 17 of the original participants. The psychological skills training program consisted of a 30-minute session each week for 8 weeks.

Following analyses, a positive correlation was found between the psychological skills training program with hitting performance and ACSI-28 scores. Specifically, a significant increase was found for the subscales: concentration, confidence and achievement motivation, goal setting and mental preparation, and peaking under pressure. At the 6-month follow up, all subscales remained similar with the exception of peaking under pressure, which returned to pre-test values. While limited by no control group, this study provides preliminary evidence that a psychological skills training program may increase baseball hitting performance and different psychological skills as well as have long-term benefits for the athletes.

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CHAPTER ONE

INTRODUCTION

Background of the Problem

Baseball has long been called America's pastime. With thirty teams in Major League Baseball (MLB) and each team being allowed to have forty players signed to major league contracts, there are currently 1,200 major league players. Additionally, each MLB team has several lower division teams associated with them. Therefore, there are several thousand professional baseball players currently in the United States. According to an article published in the *Wall Street Journal*, a survey done by the National Sporting Goods Agency revealed that there are currently nine million youth baseball players and over three million softball players in the United States (Costa, 2015). With lucrative professional baseball contracts and far fewer professional baseball roster spots than youth baseball players, a large emphasis has been put on improving youth baseball performance. The emphasis has been generally put on improving baseball technical ability and more recently on strength and conditioning for baseball (Clark, Ellis, Bench, Khoury, & Graman, 2012; Hurd & Kaufman, 2012; Palmer, Uhl, Howell, Hewett, Viele, & Mattacola, 2015). Few coaches and studies have put an emphasis on the psychological aspects of baseball performance, especially in youth athletes.

Psychological skills training (PST) has been around for multiple years. Currently, there is no consensus on which skills should be included in a PST program. Instead, coaches and researchers have chosen the skills that they think most important to their demographic. Common psychological skills incorporated in a PST program are: goal setting, relaxation techniques, concentration and focus skills, positive self-talk, negative

thought stopping, and visualization and imagery (Gucciardi, Gordon, & Dimmock, 2009; Mamassis & Doganis, 2004; Sharp, Woodcock, Holland, Cumming, & Duda, 2013; Sheard & Golby, 2006). Goal setting has been noted as a necessary skill for youth athletes to learn since it has been shown that athletes aged twelve to fourteen have unclear awareness of what they are capable of doing (Mamassis & Doganis, 2004). Thought stopping is another skill worth noting. Thought stopping is described as "the process of stopping a negative thought and replacing it with a positive one" (Sheard & Golby, 2006). Lastly, relaxation techniques have been shown to be extremely useful for athletes of all ages. When using relaxation techniques, "every aspect of performance is enhanced: concentration, attentional focus, awareness, confidence, precision, speed, and so on" (Williams, 2010, p. 249).

Statement of the Problem

PST programs have typically been assessed by use of psychological inventories and questionnaires (Gucciardi et al., 2009; Sharp et al., 2013). While these inventories do give a sense of the skills that the athletes are learning through a PST program, they do not give an indication of the transfer of a PST program to sport performance. As stated by Birrer and Morgan, "One of the targets of PST should be to initiate small improvements or progress in small steps, and it should be aim to enhance training quality as well as competitive performance" (2010). Several studies have assessed PST programs on the basis of sport performance. Sheard and Golby showed that there was significant improvement in several swimming stroke times of youth swimmers following a PST program (2006). Additionally, Mamassis and Doganis showed that there was an

improvement in the tennis performance of two select elite youth tennis players following a PST program (2004). To our knowledge, no studies have been conducted assessing the effectiveness of a PST program in youth baseball performance. One study did attempt to find the relationship between self-efficacy and hitting performance, but no PST program was utilized (Watkins, Garcia, & Turek, 1994).

Purpose of Study

The purpose of this study was to examine the effects of a psychological skills training program on the hitting performance and Athletic Skills Coping Inventory-28 scores of elite youth baseball players.

Hypothesis

H1: The hitting performance of youth baseball players will be lower at the pretest compared to the previously determined baseline hitting performance.

H2: Posttest hitting performance will be greater than both the pretest and previously determined baseline hitting performance for youth baseball players after following a psychological skills training program.

H3: Elite youth baseball players will improve their cumulative score on the ACSI-28 from pretest to posttest following a psychological skills training program.

H4: Elite youth baseball players will maintain their cumulative score on the ACSI-28 at a six-month follow up after the completion of a psychological skills training program.

Assumptions

1. The researchers assumed that all participants would receive the same baseball-specific training outside of the PST program since they were from the same team.
2. It was assumed that all participants answered all ACSI-28 questions honestly.

Delimitations

The delimitations placed on this study were:

1. The study was limited to youth, male baseball players. The conclusions will apply only to similar populations.
2. Any further research into the psychological skills training materials was done on the discretion of the athlete and not implemented by the primary investigator.

Definition of Terms

Psychological Skills Training

Psychological skills training refers to the organized plan and practice of mental skills in order to improve sport performance or improve sport-satisfaction (Birrer, 2010).

Coping with Adversity

Coping with adversity refers to the ability to remain positive when things are going poorly (Smith & Christensen, 1995).

Coachability

Coachability refers to one's openness to instruction and constructive criticism without negative emotions (Smith & Christensen, 1995).

Concentration

Concentration refers to one's ability to not be easily distracted and to be able to focus on a specific task during various adverse situations (Smith & Christensen, 1995).

Confidence and Achievement Motivation

Confidence and achievement motivation is defined by being confident and positively motivated while constantly putting maximal effort into a situation (Smith & Christensen, 1995).

Goal Setting and Mental Preparation

Goal setting and mental preparation refers to setting and working toward specific goals while mentally having a plan to achieve said goals (Smith & Christensen, 1995).

Peaking Under Pressure

Peaking under pressure refers to viewing pressure as a challenge instead of a threat and performing well under the pressure (Smith & Christensen, 1995).

Freedom from Worry

Freedom from worry refers to not pressuring one's self when performing poorly and to not worry about other's opinions (Smith & Christensen, 1995).

Youth Elite Baseball

Youth Elite Baseball, for the purpose of this study, refers to baseball players under the age of sixteen who play competitive, travel baseball and have competed at their respective age division's World Series tournament.

Hitting Score

Hitting score refers to the cumulative score over twenty at-bats (each scored 0-3) while performing the hitting test (Baseball Hitting).

CHAPTER TWO

LITERATURE REVIEW

Introduction

Baseball has long been referred to as America's pastime. Professional baseball leagues date back to over one hundred years ago. According to an article published in the *Wall Street Journal*, a survey done by the National Sporting Goods Agency revealed that there are currently nine million youth baseball players and over three million softball players in the United States (Costa, 2015). There are currently thirty teams in Major League Baseball (MLB), and each team is allowed to have forty players on their roster. Therefore, there are currently 1,200 major league players. Additionally, each MLB team has several lower division teams, which means there are several thousand professional baseball players in the United States. With the large numbers of baseball players, both amateur and professional, improving baseball performance is an important topic.

A major component of a baseball game is hitting; however, it is common knowledge amongst baseball hitters that they will fail frequently. As Yogi Berra once said, "…The single hardest thing to do in sports is to hit a baseball." A common way of assessing a baseball player's hitting success is to use their batting average. The batting average is calculated by taking the number of hits that a player has accumulated and dividing it by their total number of eligible at bats. For reference, the 2015 Major League Baseball batting average leader was Miguel Cabrera, who had a season batting average of .338 (Individual Batting). As of this review, the all-time career batting average leader is Ty Cobb, who had a career batting average of .3664 (Career Leaders). This means that a baseball player will typically fail more than six out of every ten tries. That frequent

amount of failures can have detrimental effects on future performance, something referred to as learned helplessness.

Learned Helplessness

Learned helplessness was first studied by Martin Seligman (Seligman & Maier, 1967). Learned helplessness is characterized by the tendency to give up or fail more often at tasks that are not necessarily difficult (Firmin, Hwang, Copella, & Clark, 2004). In Seligman's original experiments, he looked at the effects of inescapable shocks on dogs (Seligman & Maier, 1967). He noticed that dogs that were unable to escape being shocked did not make efforts later to prevent shocking. The dogs had acquired a sense of helplessness to the shocks. Later studies sought to see if learned helplessness could be created in humans (Firmin et al., 2004; Klein, Fencil-Morse, & Seligman, 1976; Klein & Seligman, 1976).

Klein, Fencil-Morse, and Seligman (1976) wanted to see if learned helpless could be created in college-aged students. The students were separated into several groups consisting of a group facing solvable problems, three groups facing unsolvable problems with different attributions of failure, and a control group. The groups that initially faced unsolvable problems did worse on subsequent tests compared to the control group. The researchers found that learned helplessness could in fact be produced in students. Another study conducted by Klein and Seligman (1976) sought to see if the effects of learned helpless could be reversed. The researchers took college-aged students and separated them into several groups similar to the above study. The subjects were given headphones and were subjected to loud noises. One of the groups of participants was able to stop the

noise by pushing a button, while the other groups could not stop the noise. The subjects then received a therapy session, which consisted of answering cognitive discrimination problems. After the therapy, the subjects were tested with a shuttlebox task. The researchers highlighted several findings worth mentioning. First, this study supported the idea that learned helplessness can be produced in man. Secondly, for the groups that were initially unable to escape the noise, those that were able to successfully solve the problems in the therapy session were able to reverse the sense of learned helplessness that had developed earlier. As the researchers stated, "a procedure that showed subjects that their responses produce reinforcement reversed human helplessness effects (p. 18). In a second experiment in the same study, the researchers highlighted that the solvable problems used to reverse helplessness should be related to the patient.

In a more recent study, researchers wanted see the effects of failure and learned helplessness on test taking (Firmin et al., 2004). The researchers took a group of college-aged students and gave them one of two tests. Both tests consisted of the same questions, but the order of the questions was switched. In one test, the questions were ordered from most difficult to least difficult, and the order was reversed for the other test. The findings of the study support the theory of learned helplessness. The group that received the test with the most difficult questions first ended up missing more of the easier questions later in the test. Interestingly, there was not a statistical difference between the two groups of test scores for the difficult questions. While the theory of learned helplessness has been supported in the literature, learned helplessness is not a common theory in the sport's world. That is

not to say that it cannot also be applied to sport performance. Similar, but more familiar, theories in the sports world have to do with streaks.

Hot Hand Fallacy

A common phenomenon in the sporting world is the hot hand fallacy, which is the study of the effect of past successes on subsequent performance (Doron & Gaudreau, 2014). An example of the hot hand fallacy would be the belief that a basketball player who has made several shots in a row is more likely to make his or her next shot. In more common terms, hot hand fallacy can be referred to as a "hot streak." A meta-analysis conducted by Alter and Oppenheimer (2006) sought to examine the past research into the hot hand fallacy and direct future research. The researchers conducted an extensive analysis of the hot hand studies that had been conducted up to that time. The researchers concluded that a consensus on if the hot hand fallacy is a real phenomenon had not been reached. A majority of the studies in the meta-analysis either fought in favor or against the hot hand fallacy. Additionally, the studies did not give mechanisms of where the hot hand originates.

Raab, Gula, and Gigerenzer (2012) sought to see if the hot hand fallacy exists in volleyball. The researchers first gave a questionnaire assessing the belief of the hot hand fallacy in volleyball to ninety-four sport science students in Germany. The results of the questionnaire were that ninety-one percent of the students believed that the hot hand fallacy exists in volleyball. The researchers then analyzed the hits and misses in order of occurrence for over one hundred male volleyball players across 226 games in the top league in Germany. The researchers concluded that

there was evidence for "streaks" in about one half of the players. The belief in the hot hand is not limited to players. In the same study mentioned above, coaches were shown a video of two volleyball players in offensive plays. The coaches watched four sets of forty-four attacks between the two players, where the success of the players attacks varied. The coaches were then asked to make decisions as to which player should receive the ball for the subsequent ten attacks. The results were that over ninety-two percent of the coaches believed that the player had a better chance of success after hitting two or three shots successfully beforehand (Raab et al., 2012). In a different study by Köppen and Raab (2012), the researchers concluded that both experts and beginners have a belief in the hot hand fallacy in volleyball, and both groups would make strategic decisions in a volleyball game based off of which player had the hot hand.

The hot hand phenomenon research is not limited to volleyball. Doron and Gaudreau (2014) studied the evidence of the hot hand phenomenon in sixteen national level fencers. The fencers faced each other in a match-simulated contest during practice, and their performance and results were analyzed. The researchers concluded that there was not significant evidence of a hot hand streak in fencing; however, the researchers did note that there was a difference in some psychological factors based off previous performance. After each point, the fencers filled out inventories for perceived control, negative affectivity, and task-oriented coping. The researchers found that levels of perceived control, negative affectivity, and task-oriented coping differed when the fencers had won versus lost the previous point or two points. This led the researchers to the assumption that streaks of winning after

winning or losing after losing can affect psychological processes of fencers differently.

An interesting study conducted by Arkes (2016) looked to see if there was evidence of either a hot hand or a cold hand in professional golfers. The researcher analyzed over two million holes of golf from the Professional Golf Association (PGA) tour over a ten-year period. The researcher grouped the holes in sets of three, six, nine, and eighteen holes. Thus the researcher was able to analyze the streaks from one round of golf to another and also within an individual round. The results of the study were that there was limited evidence for the existence of a hot hand effect. Interestingly, there was stronger evidence for the existence of a cold hand effect, where previous poor performance would lead to subsequent performance. This is of special interest to this review due to the relation of frequent failure in baseball hitters that was previously mentioned. Other studies have talked about the evidence of a cold hand phenomenon similar to that of the hot hand phenomenon. In a previously mentioned study (Köppen & Raab, 2012), the researchers found that there was belief in a cold hand effect. The researchers showed videos of volleyball players in methods similar to those previously described expect for the volleyball players were unsuccessful with their attacks. The sport students elected to avoid passing the ball to those that had previously failed at their attack, giving the belief that previous poor performance could lead to subsequent poor performance.

The most relevant study to this review regarding performance streaks is a study by Gray and Allsop (2013). The researchers of this study sought to find how performance influences subsequent performance under pressure and how

performance under pressure influences subsequent performance. In order to study this, the researchers took a group of thirty-six junior college baseball players and tested them in a baseball hitting simulator. The experiment had three phases: prepressure, pressure, and postpressure. The prepressure phase consisted of twenty at-bats inside the baseball simulator. An at-bat was defined as either resulting in a homerun, a ball travelling to the outfield (a hit), a ball hit into the infield (an out), or a strike out. Each at-bat was separated by five minutes to limit fatigue, and all pitches were tailored to individual abilities based off of testing done the previous day. Therefore, all participants faced the same relative difficulty of pitches. Following the prepressure phase was the pressure phase, where each participant was given one at-bat. The participants were read a script describing that the participants were in the final play of the championship game and that the fate of the game rested on them. Also, the participants were told that their performance dictated whether or not they were put into a drawing to win $100, and spectators were present to boo or cheer based on the performance. Following the pressure phase was the postpressure phase. The postpressure phase consisted of the same procedure as the prepressure phase. The researchers placed participants into either a normal, hot streak, or cold streak group based on the performance in the pressure phase. The researchers found that participants who were put into the hot streak group did significantly better in the pressure phase. Additionally, those athletes that succeeded in the pressure phase did well in the postpressure phase regardless of their performance in the prepressure phase (i.e. success in the pressure at-bat influenced subsequent success in the next twenty at-bats regardless if the hitter was

previously on a hot streak or cold streak). Interestingly, the researchers found that success in the pressure at-bat was effective at getting hitters out of their cold streak if they were previously in one, and those participants did significantly better in the postpressure. While those in the hot streak group that succeeded in the pressure phase did well in the postpressure phase, there was not the same significant increase present (Gray and Allsop, 2013).

Psychological Skills Training

Given the previously mentioned frequency of failure in baseball hitters, the fact that learned helplessness has been demonstrated in humans (Firmin et al., 2004; Klein et al., 1976; Klein and Seligman, 1976), that there is evidence and belief in a cold hand phenomenon (Arkes, 2016; Köppen & Raab, 2012), and that previous failure can affect subsequent psychological processes (Doron & Gaudreau, 2012; Gray and Allsop, 2013), there is a need to work with baseball hitters in counteracting these effects. One possible technique is the use of a psychological skills training program (PST). In a review of PST in elite sports with an emphasis on high-intensity sports, Birrer and Morgan (2010) stated that, "One of the targets of PST should be to initiate small improvements or progress in small steps, and it should aim to enhance training quality as well as competitive performance" (p. 85). PST has been around for multiple years and in multiple different sports. Daw and Burton (1994) studied the effects of PST in a group of collegiate tennis players. Twelve tennis players were introduced to skills such as goal setting, imagery, and arousal regulation and were then given the opportunity to design their own PST

based off of their desires. Following the PST, the researchers found that the tennis players receiving the PST had significantly fewer double-faults than a group of tennis players within the same conference. Additionally, all of the tennis players that received the PST stated that they found the PST to help them play better based off of a subjective evaluation conducted at the end of the season. Also, the researchers found that the tennis players who indicated that they were highly committed to the PST also indicated that they found the PST to be more helpful than the tennis players that indicated low commitment (Daw & Burton, 2004, p. 54).

Thelwell, Greenlees, and Weston (2006) studied the effects of PST in a small group of college-aged soccer players. Thelwell et al., took a group of five soccer midfielders and introduced them to PST consisting of relaxation, imagery, and self-talk. The PST took place over three days, with one skill being taught each day for a maximum of one hour. The researchers measured the effectiveness of the program on both subjective measures (e.g. Has the intervention proved useful to you?) and performance measures (first touch percentage, pass percentage, and tackle percentage) over nine games. The researchers concluded that all five of the participants showed at least small improvements in the performance measures as a result of the PST. While the data was not statistically significantly, there was the belief that it was practically significant. One possible reason for the lack of the statistical significance mentioned by the authors is that not all midfielders have the same role (i.e. some midfielders are more attack-oriented while others are more defensive-oriented) in a game (Thelwell et al., 2006, p. 267). As for the subjective measures, the participants answered with an average of a six out of possible seven,

where seven was extremely useful, further showing that participants see benefits from engaging in a PST.

The effects of PST are not limited to just experienced athletes. Beauchamp and Halliwell (1996) studied putting performance in a group of novice golfers. The researchers took sixty-five college students enrolled in an introductory golf class and assigned them to one of three groups: a control group, a physical skills training group (PSG), and a cognitive-behavioral group (CBG). The CBG were taught skills such as relaxation training, positive thought control, mental rehearsal, concentration, goal setting, and preperformance routines along with an introduction to the physical skills of putting. The PSG received instructions on the physical processes of a putt (stance, ball position, backswing, and forward swing). The control group received golf instructions but no specific putting instructions. The groups followed their respective program for fourteen weeks. Putting performance was measured at week two, six, ten, and fourteen and was based off of a point-scoring system where the closer to the hole a putt was, the more points the participant was awarded. The researchers found that all three groups had an increase in putting performance over time; however, the CBG had a significantly greater increase in putting performance compared to both the control and PSG (Beauchamp & Halliwell, 1996, p. 165). Interestingly, the increase in performance for the CBG was not clearly greater until the fourteen-week test, which might indicate that it takes a certain amount of time for the psychological skills to be fully learned and applicable.

PST in Youth

PST has also been used and studied in youth athletes as well as collegiate-aged and older athletes. Mamassis and Doganis (2004) studied the effects of PST in a small group of elite junior tennis players. The tennis players had a mean age of fourteen years and were all ranked within the top twenty-five players in Greece at the time of the study. Five players received the PST while four did not. The PST consisted of goal setting, positive self-talk, concentration and routines, arousal regulation, and imagery. Each skill was taught over seven weeks with one skill being taught each week at a sixty-minute session. The first week was an introduction session, and the last week was a review of what had been covered. The tennis performance was measured based off of a subjective questionnaire having each player rate their performance in eight different categories on a five-point scale. The findings showed that all five of the athletes had an increase in performance measures while none of the athletes in the non-PST group reported increases in performance measures. While the findings show support for the use of PST in youth athletes, this study had a small sample size and performance measures were subjective rather than objective, so actual performance increases are not clear.

Sheard and Golby (2006) studied the effects of PST on swimming performance in thirty-six national level swimmers with an average age of 13.9. The PST program consisted of goal setting, visualization, relaxation, concentration, and thought stopping and lasted approximately forty-five minutes per week. The PST program was introduced during the last quarter of the swimming season. Swimming performance was based off of race times and was measured pre-PST, post-PST, and

one month after the PST. Significant increase from pre- to post-PST in swimming performance was found in the 200m freestyle. Increases were also seen in three other events. At the one-month post-PST test, improvements were seen in ten events when compared to the pre-PST times. Additionally, all thirty-six swimmers that participated in the study reported that they had perceived increases in training performance following the PST (Sheard & Golby, 2006, p. 160). One downside to this study is that the PST program was conducted when the season was already halfway over, and that is generally the least desirable time to start PST (Williams, 2010, p. 366).

Looking at rugby players, Sharp, Woodcock, Holland, Cumming, and Duda (2013) studied the effectiveness of PST in elite, under-sixteen male rugby players and their coaches. The PST consisted of nine sessions lasting one hour each and contained skills such as: goal setting, self-talk, arousal control, imagery, and precompetition routines and plans. All participants reported having limited knowledge to PST and its benefits prior to the study. All measures in the effectiveness of the PST were subjective. The athletes reported that the PST had positive effects on their performance. Common responses were, "Self talk helped me the most. I never used to talk to myself before a game but now I do..." (Sharp et al., 2013, p. 226). Coaches also reported similar benefits to the athletes' involvement in the PST. The researchers summarized that rugby athletes perceive benefit from PST, and the benefit is shared with their coaches. Sharp et al. (2013) also noted the importance of getting coach support in practicing PST skills in practice environments to further increase its benefit (p. 230).

Most recently, Foster, Maynard, and Butt (2016) sought to find the most effective ways of delivering PST to youth athletes. The researchers interviewed twelve sport psychologists that had significant experience in working with youth athletes. The researchers then summarized the findings from the interviews. It appears that the sport psychologists believe an important part of utilizing PST with youth athletes is matching the program to the athletes (p. 67). Matching the program involves relating the content of the PST to both the athletes' ability and language. As the twelfth sport psychologist said, "...You can try and match their mental training package appropriately to their capabilities, as well as their needs" (p. 67). Another important component of delivering PST to youth appears to be the delivery medium. The sport psychologists interviewed mentioned that the way you incorporate the PST is dependent on individual athletes (i.e. does the athlete like storytelling, visual aids, physical aids, incorporating PST in practice settings, or technological aids) (p. 70). It appears that the sport psychologists agreed that video presentations are beneficial aids to include (p. 71). Lastly, the sport psychologists talked about best practices to maintain engagement in the PST from the youth athletes. The researchers summarized these statements into incorporating self-discovery (i.e. allowing the athletes to figure things out for themselves), incorporating fun into the sessions, making the skills and concepts as simple as possible, and making the PST environment not replicate a school environment (i.e. do not use desks and workbooks or tests) (p. 72).

Goal Setting

There is currently not an agreed upon set of skills to incorporate into a PST intervention. It has been mentioned that demands of the sport should be analyzed as well as the time frame to incorporate the skills (Williams, 2010, p. 375). Goal setting is a skill commonly used in PST (Daw & Burton, 1994; Beauchamp & Halliwell, 1996; Mamassis & Doganis, 2004; Sheard & Golby, 2006; Birrer & Morgan, 2010; Sharp et al., 2013). According to Merriam-Webster's online dictionary, goals are defined by, "something that you are trying to do or achieve." Mamassis and Doganis (2004) stated that youth athletes usually have a vague impression of what they are capable of doing, and that by having goals, they can increase their awareness of their capabilities (p. 133). As stated by Williams (2010), "...goal setting clearly and consistently facilitates performance" (p. 202). Ortega, Olmedilla, Palao, Sanz, and Bazaco (2013) incorporated a goal-setting intervention in an under-twelve basketball team. The researchers found that the athletes had a greater level of achievement of their goals following the goal-setting intervention.

Arousal Regulation

Another common skill in PST is arousal regulation (Daw & Burton, 1994; Beauchamp & Halliwell, 1996; Mamassis & Doganis, 2004; Birrer & Morgan, 2010). Arousal regulation has also been proven effective in youth athletes (Sheard & Golby, 2006; Sharp et al., 2013). Birrer and Morgan (2010) defined arousal as, "the cognitive and somatic reaction to an internal or external stimulus" (p. 82). There have been several skills to combat unwanted arousal, one of which is relaxation

techniques. One relaxation technique is the use of breathing exercises (Williams, 2010, p. 251-252). As stated by Williams (2010), "Breathing properly is relaxing, and it facilitates performance by increasing the amount of oxygen in the blood..." (p.251). Another form of relaxation is meditation. Again, Williams (2010) stated, "The regular practice of mediation helps one achieve a state of deep relaxation, and it facilitates concentration by disciplining the mind" (p. 257). Fifteen minutes of deep-breathing exercises has been shown to lower levels of salivary cortisol, a common marker of stress, in college-aged students (Dawson, Hamson-Utley, Hansen, & Olpin, 2014).

Self-Talk

Self-talk is another commonly utilized skill in PST. Williams (2010) claimed, "you engage in self-talk any time you carry on an internal dialogue with yourself" (p. 311). Tod, Hardy, and Oliver (2011) performed a systematic review of the literature relating self-talk to performance. The review consisted of forty-seven studies. The researchers found that positive self-talk, instructional self-talk, and motivational self-talk were related to improved performance. Interestingly, the researchers did not find a clear link between negative self-talk and performance decreases (p. 678). One possible rationalization for this was that negative self-talk might lead to motivational self-talk meant to improve performance (e.g. after making an error, a player might talk to himself in order to "work things out"). The lack of evidence of negative self-talk and performance decrements goes against common prescriptions. Williams (2010) stated that negative self-talk leads to immediate performance

decreases as well as possible decreases in self-esteem (p. 312). Hardy, Begley, and Blanchfield (2015) studied the differences in performance of forty Gaelic football players while kicking and using either motivational or instructional self-talk. When kicking with their dominant foot, the researchers found that there was a significantly greater kicking accuracy when using motivational self-talk versus instructional self-talk. There was not a significant difference in shooting accuracy between motivational or instructional self-talk when using the nondominant foot (p. 136).

Concentration

Concentration training is another skill that typically gets attention in PST (Beauchamp et al., 1996; Sheard & Golby, 2006). Williams (2010) stated, "Concentration is essential for performing one's best..." and "Unless attention control training has occurred and concentration skills have been mastered, performance will almost always suffer" (p. 336). Techniques to increase focus consist of trigger words, centering or the "conscious process used to adjust weight about your center of mass so you feel centered and in control" (Williams, 2010, p. 350), focus training, and having pre-performance routines (Williams, 2010, p. 350-353). In the previously mentioned article by Arkes (2016), one given reason as to the presence of the cold hand in golfers was a lack of concentration following several poor performances (p. 112). Castaneda and Gray (2007) studied the differences in baseball batting performances of eight highly skilled (i.e. current college baseball players) and eight unskilled (i.e. college-age participants that did

not play collegiate baseball but still had experience with baseball) participants. The participants were put into a batting simulator and four different trials were conducted with the participants having either a skill/internal, skill/external, environmental/external, or environmental/irrelevant focus. The researchers found that the highly skilled participants performed best when they had an environmental/external focus (e.g. flight of the ball after hitting the bat) verses an environmental/irrelevant focus (e.g. random auditory tone). Also, skill/external focus (e.g. flight of the bat) was related to a significantly better batting performance compared to a skill/internal focus (e.g. movement of the hands) (p. 71). The unskilled participants did not show a significant difference in either the skill/external or skill/internal focus trials (p. 74).

Pre-Performance Routine

Lastly, constructing a pre-performance routine is a skill that typically gets less attention in PST. In the already mentioned studies, Beauchamp et al. (1996) and Sharp et al. (2013) both included pre-performance planning and routines into their respective PST. Williams (2010) stated, "Performance is likely to be enhanced if an athlete's preparation becomes more systematic" (p. 380). As mentioned previously, pre-performance routines could influence concentration levels (Williams, 2010, p. 353). Mesagno, Marchant, and Morris (2008) studied the effects of utilizing a pre-performance routine in "choking-susceptible" athletes. The researchers took eighty-eight experienced bowlers and placed them in either a low pressure or high pressure situation both before and after an intervention consisting of learning about

pre-performance routines. The researchers found that in the initial pressure situation, participants experienced choking-related cognitions. In the second pressure situation following the intervention, participants had an average performance increase of twenty-nine percent (p. 454). One reason given for the increase in performance during the pressure situation following intervention was that participants reported fewer instances of negative self-talk. Lautenbach, Laborde, and Mesagno (2015) also studied the effects of a pre-performance routine in athletes. The researchers took a group of twenty-nine experienced tennis players and tested them pre- and post-intervention. The testing consisted of high-anxiety, pressure tennis serves. The intervention lasted four weeks, and consisted of learning a pre-performance routine consisting of focus and verbal cues as well as physical routines. The researchers found that at the pre-test, participants performances decreased during the high-pressure situations, while there was not the same decrease at the post-test following the pre-performance routine intervention. A control group did not show changes in performance comparing pre- and post-test (p. 128).

Conclusion

The purpose of this article was to review the literature regarding psychological skills training with an emphasis on baseball hitting. Few studies have looked at psychological skills training specifically on baseball hitting. Studies mentioned in this article have shown a belief in a cold hand phenomenon and a possible relationship between failure and subsequent psychological processes in

sport. Psychological skills training has been shown to positively affect both sport performance and subjective psychological measurements in both adults and youth athletes. Given the high prevalence of failure in baseball hitting and its potential ramifications, future studies should examine the effects of psychological skills training on baseball hitting performance.

CHAPTER THREE

METHODOLOGY

Introduction

The purpose of this study was to examine the effects of a psychological skills training program on baseball hitting performance. PST programs are typically not studied in youth populations. This 8-week study was designed to examine whether youth baseball players would improve their hitting performance after following a psychological skills training program.

Statement of the Problem

The purpose of this study was to examine the effects of a psychological skills training program on the hitting performance of youth baseball players and to see how much of the skills they retained at a follow up

Subjects

The participants were male, youth baseball players that had at least one year of playing competitive baseball prior to enrolling in the study. Athletes participating in the study were elite players from Central Illinois playing on elite travel squads. Athletes all trained in a year-round facility during the off-season. Coaches of the respective club teams were known to the principal investigator and were recruited directly through a club contact. All participants had completed the hitting performance test as an end-of-season performance test the prior season. The researcher made arrangements with the teams' head coaches and received permission to approach their athletes. Each participant was

required to give writing assent and each participant's legal guardian was required to give written informed consent prior to participating, as approved by Lindenwood University's Institutional Review Board (IRB).

A total of 30 youth baseball players began the study, 27 of which completed the pretest and posttest and 17 completed 6-month follow up data.

Subject Characteristics

The teams ranged from Under-11 to Under-14 years of age representing Grades 6-8. The average age was 13.3 years. The average competitive training age for the youth baseball players was 4 years.

Research Instrumentation

All participants participated in the previously completed baseline hitting test and participated in the pre-test (at the beginning of the preseason) and the post-test (at the conclusion of the preseason). The data collection instruments used for the study were the Athletic Coping Skills Inventory-28 (ACSI-28) and the hitting test.

The ACSI-28 consists of 7 subscales (Coping with Adversity, Coachability, Concentration, Confidence and Achievement Motivation, Goal Setting and Mental Preparation, Peaking Under Pressure, and Freedom from Worry). The format for the ACSI-28 test consisted of 28 questions on a 4-point modified Likert scale. Participants answered questions related to self-appraisal of psychological skills with 0=Almost Never, 1=Sometimes, 2=Often, and 3=Almost Always. Out of the 28 questions, 6 questions were reverse scored. The test was administered by the researcher and was monitored to make

sure the test was done individually so answers would not be influenced by each other. An example of the ACSI-28 test used in the study is attached in Appendix B.

The hitting testing was performed via the use of a baseball pitching machine and batting cage. The pitching machine allowed for more reliable data since it will be able to control pitch speed and accuracy. In a trial of 100 pitches, the pitching machine hit a 2 foot by 2 foot square 100 times. The same pitting machine was used for each subject in the previous baseline test, pretest, and the posttest. The speed of the pitching machine was set at 60mph and 70mph for the Under-11 and Under 14 teams, respectively. Additionally, each athlete was able to select their own baseball bat to use for the tests, but they were instructed to use the same bat for both tests. All participants were given 3 practice pitches followed by 20 scored pitches. The scoring was done based on guidelines established by the Baseball Coaches Association, where three points were awarded for a line drive, two points were awarded for a ground ball, one point was awarded for a fly ball, and no points were awarded for not hitting the ball. A hit was considered a ground ball when hit six yards or less in the air, a line drive when it is hit between six and twelve yards in the air, and a fly ball when it is hit twelve yards or higher in the air (Baseball Hitting). The same judge scored all of the participants in order to increase reliability.

The follow up was conducted six months after the completion of the PST program (Appendix C) and also consisted of a focus-group style interview.

Psychological Skills Training Treatment Protocol

Participants met once per week for 8 weeks with the primary researcher to receive the Psychological Skills Training program. Each session lasted 30 minutes and was conducted prior to the team's practice to attain maximum attendance. The topics covered in the PST program included: self-talk, goal setting, mental toughness, focus and concentration, mental imagery, handling setbacks, and pre-performance routines. Each week was consisted of providing educational information as well as activities to increase their knowledge. At the end of each session, participants were asked to think of ways they could apply that week's information into their following practice. Questions were allowed at any time during the sessions.

Week 1: Introduction to Psychological Skills Training

The first week of the study was an introductory week. Participants were informed what PST is, how it could benefit them, and were given examples of athletes that had received similar types of training.

Week 2: Self-Talk

Participants were given a description and explanation on what self-talk is and the different kinds of self-talk. Participants were asked if they though positive self-talk or negative self-talk was more beneficial for baseball performance. Next, participants were introduced to thought stopping and its benefits. Participants were asked to come up with a cue work that they could use if they find themselves thinking negatively. Next, participants were asked to come up with hypothetical situations in which they could experience negative self-talk, and then they were given the chance to come up with ways to turn the negative self-talk into positive self-talk. Lastly, participants were given a

notecard. The participants received an explanation of what positive affirmation statements are and the benefits of them. They were then asked to write down a positive self-affirmation for themselves. They were told that they could carry the notecard with them in their bag to games, leave it next to their bed to read and say every morning, or wherever they thought best.

Week 3: Goal Setting

Participants were asked if they thought setting goals is important. Next, they listened to a brief description and explanation of the different types of goals (outcome, performance, process goals) and the benefits of goal setting. Participants were then given a hypothetical situation (i.e. a baseball player) and asked to come up with different types of goals for the hypothetical athlete. Participants were then able to learn and practice setting SMART (specific, measurable action-oriented, realistic, time-bound) goals effectively. Lastly, participants were given the Goal Setting Worksheet (Appendix D) to fill out. Participants were told that the worksheet is theirs to keep and there would be no judgment for their goals.

Week 4: Mental Toughness

Participants were first asked what they believed mental toughness is. Then participants were asked whom they think of when they hear "mentally tough athlete" and why they think of that person. Participants were then asked if they think mental toughness is something people are born with or is a skill that can be developed. Next, participants listened to a lecture and explanation of what mental toughness is and were given examples of athletes that showed mental toughness in various situations. Participants were then given several strategies to build mental toughness. These included:

using positive self-talk, which was covered previously, having self-affirmation statements, which was covered previously, creating trigger words that they can use to refocus themselves when they notice they need to be more mentally tough, as well as arousal regulation techniques. The participants underwent a brief, easy breathing pattern consisting of a slow, deep breath (3 second inhalation through the nose and a 3 second exhalation out the mouth) to work on their arousal regulation skills.

Week 5: Focus and Concentration

Participants were given a concentration number grid (Appendix E) and told to circle as many numbers in order as they could in 90 seconds. Participants were then instructed to do the same activity while loud noises and distractions were present. Participants were asked to count up their total amount of numbers circled for each trial and asked if it was easier to complete the concentration number grid with or without the outside distractions. Participants were asked what they believe focus and concentration is. They were then asked why many people think they need to be able to focus better and more often and if these are skills that can be trained. Next, participants were given a brief description and explanation of focus and concentration. Participants were asked to perform a focus activity of staring at a dot on a television screen for 1 minute. Then they were asked to stare at the same dot for 1 minute while a cross is now next to the dot. Participants were instructed not to look at the cross and only look and think about the dot. Lastly, participants were instructed to close their eyes and think about a stadium clock. They were told to visualize the clock counting down from 60 to 0 seconds and to stand up when they thought the 60 seconds were completed in real time. Participants were told of

the value of being able to concentrate in real-life situations and how it benefits baseball specifically.

Week 6: Mental Imagery

Participants were asked what mental imagery is. Participants were then asked when mental imagery could be useful and if they have any experience using it. Next, participants were told a brief description and explanation of what mental imagery is and how to use it. Participants were then asked to perform several visualization exercises. For the first exercise, participants were instructed to close their eyes and imagine themselves peeling and eating an orange vividly. Then the participants were asked how well they could see the orange in their mind and if they could taste the orange. Next, participants were told to stare at a real baseball bat for 60 seconds while taking in as many details as possible. They were then asked to recreate the image of the bat with as many details as possible while their eyes were closed. Lastly, participants were shown a brief video clip of a baseball player stepping into a batter's box and taking an at-bat. Following the video clip, the participants were asked to close their eyes and recreate the action of taking an at-bat as vividly as possible. The participants were asked how well they were able to see the at-bat and how it felt. After the visualization exercises, the participants brainstormed different scenarios that they could use mental imagery in to improve their hitting performance.

Week 7: Handling Setbacks

Participants were given a lecture on handling setbacks. Participants were given a description and explanation of fixed and growth mindsets. Participants were then asked which mindset they thought as more beneficial for a baseball player. Participants were

then given several strategies and skills that they could use to handle errors and setbacks. These skills were: using positive self-talk after making a performance error in order to maintain success, creating a thought stopping cue word when they recognize that they are thinking negatively, and using mental recall to remain positive. Participants were asked to think of a time in the past that they believe they performed very well and makes them feel good. Participants were then instructed to "relive" that performance by using visualization to experience the good feelings anytime that they experience real-life setbacks.

Week 8: Putting It All Together

Participants were asked to recall the different skills that they learned leading up to the final week. Participants were then told how continual practice of these skills is important in order to improve them. Participants were told what a pre-performance routine is and how it could benefit their performance. Participants were then asked to create a pre-performance routine that was specific to them and that they could use prior to any performance that they may have. Participants were able to have the primary researcher assist them in the creation of a pre-performance routine if necessary.

Data Collection Procedures

All participants underwent the pretest data collection process prior to the beginning of the PST program. The ACSI-28 was distributed by the primary researchers. All participants completed the ACSI-28 and hitting test for the pretest and the posttest. No control group was used as part of the study design. At the follow up test, participants completed the ACSI-28 and partook in the focus group. The focus group was audio

recorded. After data input, all identifying information was destroyed to ensure confidentiality and anonymity.

Statistical Treatment of Data

The ACSI-28 assessment tool was utilized in this study along with a hitting performance test. Participant data was entered into SPSS 24.0 (Statistical Package for the Social Sciences) for analysis. Pre-test data was initially entered into the SPSS workbook after creation of an appropriate codebook. Post-test data and six-month follow-up data was then completed before data analysis was conducted.

The first step in data analysis was to conduct a frequency data analysis that allowed data cleaning. After data cleaning, three participants were removed from consideration for final data analysis due to not completing all steps of the data collection process.

The second step in data analysis was to compute subscale scores for the ASCI-28 instrument for the pre-test, post-test, and 6-month follow-up. Descriptive statistics analysis was used in order to calculate mean score distributions. Subsequently, a series of Paired Samples T-Tests were run to assess whether differences existed between the three testing times and for hitting score.

Finally, a correlational analysis was conducted to assess whether significant correlations existed between pre-test and post test on the ASCI-28, pre-test and 6-month follow-up on the ASCI-28, and post test and 6-month follow-up on the ASCI-28.

Summary

This was an exploratory study examining the effects of an 8-week PST program on hitting performance in elite, youth baseball players. All participants had previously completed a baseline hitting test and completed a pretest and posttest consisting of the same hitting test as well as the ACSI-28. A follow up was done 6 months after the posttest that consisted of the ACSI-28 and a focus group. The hypothesis tested was that the posttest hitting performance of elite, youth baseball players will be greater than the baseline and pretest hitting performance after completion of a PST program. Elite youth baseball players will improve their cumulative score on the ACSI-28 from pretest to posttest following a PST program. Elite youth baseball players will maintain their cumulative score on the ACSI-28 at a 6-month follow up after completion of a PST program.

CHAPTER FOUR

RESULTS

Introduction

The following four research hypotheses were utilized in this study:

H1: The hitting performance of youth baseball players will be lower at the pretest compared to the previously determined baseline hitting performance.

H2: Posttest hitting performance will be greater than both the pretest and previously determined baseline hitting performance for youth baseball players after following a psychological skills training program.

H3: Elite youth baseball players will improve their cumulative score on the ACSI-28 from pretest to posttest following a psychological skills training program.

H4: Elite youth baseball players will maintain their cumulative score on the ACSI-28 at a six-month follow up after the completion of a psychological skills training program.

The next section presents results of the data analysis summarized in tables. Data analysis was conducted using descriptive statistics analysis, paired samples T-Test analysis and correlational analysis.

Table 1: Descriptive Statistics for ASCI-28 Assessment Pre-Test versus Post-test (N=27)

Scale	Pre-Test Scores		Post Test Scores	
	Mean	Std. Dev.	Mean	Std. Dev.
Coping With Adversity	6.81	2.02	7.37	2.60
Coachability	10.07	2.04	10.15	2/01
Concentration	7.30	2.15	8.56	2.42
Confidence and Achievement Motivation	9.19	1.88	9.67	1.57
Goal Setting and Mental Preparation	5.59	2.27	6.48	2.82
Peaking Under Pressure	6.93	2.63	8.44	2.39
Freedom From Worry	7.26	3.18	7.30	3.17
TOTAL ASCI SCORE	53.15	10.89	58.00	11.01

From pre-test to post test, all seven subscales and total scale experienced an increase. The largest increases were seen for total ASCI-28 scale (+4.85) and Peaking Under Pressure (+1.51).

Table 2: Paired Sample T-Tests for ASCI-28 for Participants (N=17).

Scale		Treatment Mean	Std. Dev.
Scale Total Score	Pretest	48.41	10.30
	Posttest	54.71**	11.26
	6-month Follow-Up	55.00	13.82
Coping with Adversity	Pretest	6.12	1.83
	Posttest	6.35	2.23
	6-month Follow-Up	7.00	2.76
Coachability	Pretest	9.47	2.24
	Posttest	9.82	2.04
	6-month Follow-Up	10.12	2.15
Concentration	Pretest	6.76	2.22
	Posttest	8.06*	2.68
	6-month Follow-Up	8.12	2.47
Confidence and Achievement Motivation			
	Pretest	8.35	1.69
	Posttest	9.29*	1.65
	6-month Follow-Up	9.06	1.60
Goal-Setting and Mental Preparation			
	Pretest	4.76	2.05
	Posttest	6.35*	2.78
	6-month Follow-Up	6.71	2.44
Peaking under Pressure	Pretest	6.47	2.62
	Posttest	8.29**	2.44
	6-month Follow-Up	6.94	2.58
Freedom from Worry	Pretest	6.41	3.73
	Posttest	6.47	3.37
	6-month Follow-Up	7.12	3.18

*p<.05; **p<.01; ***p<.001

The above table shows the mean scores for the 17 participants that completed the pre-test, post test, and six-month ASCI-28 testing protocol. Four subscales showed a statistically significant increase from pre-test to post-test (Concentration +1.30; Self-Confidence +.94; Goal-Setting +1.59; and Peaking under Pressure +1.82). The overall scale increased significantly from 48.41 to 54.71 (+6.30). The above table also shows 6-month follow-up results to illustrate that subscale scores remained consistent over time.

Table 3: Paired Samples T-Test for Hitting Performance Following Participation in a Psychological Skills Training Program (N=27)

Variable	Mean Hitting Score	Std. Dev.
Baseline Hitting Test End of Fall Season 2016	30.78*	7.94
Pretest Hitting Start of Spring Preseason 2017	25.89	6.36
Pretest Hitting Start of Spring Preseason 2017	25.89	6.36
Posttest Hitting End of Spring Preseason 2017	34.74***	6.60
Baseline Hitting Test End of Fall Season 2016	30.78*	7.94
Posttest Hitting End of Spring Preseason 2017	34.74***	6.60

*p<.05; **p<.01; ***p<.001

Athletes during the study were given three separate opportunities to take a hitting test. The first testing time happened during September of 2016 which coincided with the conclusion of the 2016 season. This score was used as a baseline score for the following study. Pre-test hitting scores for the same athletes was collected in March 2017 of the pre-season. The corresponding post-test data on hitting was collected eight weeks later in May of 2017 immediately prior to the competitive season beginning. Baseline testing (30.78) was found to be significantly higher than the pre-test hitting score (25.89). Post test hitting score (34.74) was determined to be statistically significantly higher than both baseline testing and pre-test.

Table 4: Significant Correlations for ACSI-28 Testing (Pre-Post & 6-Month Follow-up)

Variable Pair	Correlation	Significance
ASCI-28 Total Scores		
Pre-Test & Post-Test	.656	.004**
Pre-Test & 6-Month Follow-Up	.575	.016*
Post-Test & 6-Month Follow-Up	.602	.011*
Post & Follow-Up (Coping with Adversity)	.691	.000***
Post & Follow-Up (Coachability)	.548	.023*
Post & Follow-Up (Concentration)	.235	.364
Post & Follow-Up (Confidence)	.467	.050*
Post & Follow-Up (Goal Setting)	.732	.090
Post & Follow-Up (Peaking Under Pressure)	.359	.157
Post & Follow-Up (Freedom from Worry)	.862	.000***

*p<.05; **p<.01; ***p<.001

The purpose of the 6-month follow-up for the ASCI-28 was to determine whether any long-term stability might occur for the psychological skills training variables. For all three testing periods, the total ASCI-28 instrument showed an overall relationship in how athletes scored themselves. However, the most meaningful correlations were found between four subscales for the post-test and 6-month follow-up. The only three subscales that did not show a significant correlation were for concentration, goal setting and peaking under pressure.

Qualitative Results

The next section shows a summary of the qualitative data collection at the 6-month follow-up. Seventeen (17) athletes self-selected themselves to participate in a focus group to discuss the long-term impact of participating in a Psychological Skills Training program. The following themes emerged from the focus group interview.

Importance

The importance of Psychological Skills Training and its specific skills for baseball players came up several times by several different participants during the focus group. When asked why one would want to participate in a Psychological Skills Training program, one participant said, "Baseball is an incredibly mentally challenging sport." Another participant followed up by stating that they realized, "You can do more than you think you can." Yet another participant added that, "… baseball is like an important mental sport", which another participant followed with, " [because] emotions come into play." After being asked of the specific skill of concentration, one participant stated, "[It's] very important. You need to be able to focus on what you're supposed to be

doing." When asked about the skill of handling setbacks, another participant stated it as "Pretty important. Because if you're down during a baseball game then you're most likely going to play bad, but if you keep a positive attitude, you keep trying to get better and better and end up winning."

Impact

The impact of the Psychological Skills Training program is another theme that emerged during the focus group. Talking about the program in general, one participant said, "I try to use it every game. Before every at bat. Before the game." Several of the other participants echoed those comments of using it "every game". Another participant said, "In the short term you can use it [Psychological Skills Training] before every game … but I think if you use it every single game … eventually it builds up and it's just like the way you play. It turns you into that person." When talking about how the skill of concentration has affected them, one participant said, "… Before a game I will be messing around and then as soon as the game starts I'm like focused on the game and only the game." Another participant echoed those comments for the group and said, "I think we have all improved [on concentration]." When talking about imagery, one participant stated, "It's pretty important. It's actually become part of my game."

Continued Use

The continued use of Psychological Skills Training is another theme that emerged throughout the focus group interview. Participants had taken some of the lessons and activities and practiced them on their own time. One participant mentioned, "I stare at a wall for like ten minutes and try to block out everything [to practice concentration skills]." A different participant talked about how they are using goal setting for future

performance and said, "[My goal is] 80mph exit velocity off the [baseball] tee by next spring." When talking about goal setting, one participant mentioned, "I probably use short term, day by day more. Each at bat just knowing the situation and knowing what you are trying to do."

Generalization

Generalization is the common theme that came up for several of the participants as well. Generalization refers to the ability to take the skills learned in one specific setting and apply them to other settings. When talking about the psychological skill of goal-setting for baseball, one participant mentioned, "I'm [now] setting goals in school, like being positive." Another participant stated, "Especially in terms of like weight lifting I've used it [goal setting] and … I went from 95 pounds when we started … now I am like 135." Some participants also applied the program, designed for baseball hitting, and carried the skills into other aspects of the game. One participant said, "Yeah even in fielding too. Imagining what's going to happen if it [the ball] comes to you. If you're pitching, imagine where you want the ball to be." Another participant shared similar doings as well, "When I am up to bat or pitch, I think … where do I want to put it so they hit it to this spot to get a double play."

CHAPTER FIVE

DISCUSSION

Introduction

The purpose of this study was to examine the effects of a psychological skills training program on the hitting performance of elite youth baseball players. A total of 27 youth baseball players ranging from Under-11 to Under-14 age divisions completed the pretest and posttest. Seventeen of the 27 participants completed a follow-up test and focus group 6-months after completion of the posttest. Hitting performance was assessed using a batting cage hitting test both pretest and posttest as well as at a previously completed date prior to the study. Participants' psychological skills were assessed using the ACSI-28 (Athletic Coping Skills Inventory-28) pretest, posttest, and at the 6-month follow up. Participants met once per week for 30 minutes for the 8-week psychological skills training program. The following sections will present significant findings and interpretation of the results of the study. Practical implications along with suggestions for future research will be presented as well.

Summary of Important Findings

The following research hypotheses were tested for the present study: (1) The hitting performance of youth baseball players will be lower at the pretest compared to the previously determined baseline hitting performance; (2) Posttest hitting performance will be greater than both the pretest and previously determined baseline hitting performance for youth baseball players after following a psychological skills training program; (3) Elite youth baseball players will improve their cumulative score on the ACSI-28 from pretest to posttest following a psychological skills training program; (4) Elite youth

baseball players will maintain their cumulative score on the ACSI-28 at a six-month follow up after the completion of a psychological skills training program.

Hitting Performance

The hitting performance of the participants was significantly lower ($p<.05$) at the pretest compared to the baseline hitting test. Baseline hitting scores had a mean of 30.78 compared to 25.89 at pretest (Table 3). This supports the first research hypothesis and was expected. The baseline hitting test was completed at the completion of the prior season. Teams and athletes typically structure their season to peak at the end of the season. Thus, hitting performance should be at their highest. Following completion of the season, athletes have several months off from team practices; therefore, one would expect hitting skills to be "rusty" or lower. This is especially prevalent in certain geographical areas where the weather conditions don't allow for normal outdoor activities.

The hitting performance of the participants was significantly higher ($p<.001$) at the posttest compared to the pretest. Posttest hitting scores increased by 8.85 (25.89 to 34.74) according to Table 3. Posttest hitting scores were also significantly higher ($p<.001$) than the baseline scores (30.78 to 34.74). This supports the second research hypothesis. Following the 8-week psychological skills training program, the participants scored higher on their hitting tests. Other studies also showed an improvement in sport performance following a psychological skills training program. Thelwell, Greenlees, and Weston (2006) saw an improvement in soccer-specific performance skills (passing, dribbles, etc.) after following a psychological skills training program. In tennis, a group of athletes saw a decrease in double-faults after following a self-guided psychological skills training program (Daw & Burton, 1994). In youth athletes, Sheard and Golby

(2006) saw a favorable decrease in swim times for a group of already accomplished swimmers. While these studies lend to the benefits of the psychological skills training program of the present study, it should be noted that other factors could have influenced the increase in hitting performance. Over the course of the 8-week program, the participants were in their respective team's preseason. The teams worked on hitting throughout the preseason, which could have influenced the increase in hitting scores pretest to posttest. That is one potential limitation of the study.

Hitting performance was significantly higher ($p<.001$) posttest compared to baseline testing. Posttest scores were increased 3.94 compared to baseline (30.78 to 34.74), as seen in Table 2. This also supports the second research hypothesis. As previously stated, teams typically plan their season to peak near the end. Therefore, one would expect hitting scores to be highest at the end of the season, not the end of the next preseason as found in the present study. We hypothesize that this is due to the benefits of the psychological skills training program, though there could be other factors as well. Since the completion of the baseline (end of previous season) to the completion of the posttest (end of current preseason) covered a span of several months, maturation and physical growth could influence hitting performance. Physical changes were not measured for the present study, which is another limitation.

Psychological Skills

The cumulative scores on the ACSI-28 for the 27 participants significantly increased pretest to posttest after following the 8-week psychological skills training program, which supports the third research hypothesis. As seen in Table 1, cumulative scores increased by 4.85 (53.15 to 58.00). Each of the subscales saw an increase in scores

with the greatest increase in "Peaking Under Pressure" (+1.51) and the smallest increase being "Freedom From Worry" (+0.04). These findings support the notion that the psychological skills training program was sound. This is further supported based off of the qualitative feedback from participants. When talking about specific components of the program, one participant said, "I think we have all improved [on concentration]." Another participant stated, "It's pretty important. It's actually become part of my game."

A significant increase ($p<0.1$) in cumulative ACSI-28 scores was seen pretest to posttest after being analyzed for only the 17 participants that completed the 6-month follow up test (Table 2). Four of the subscales (Concentration, Confidence and Achievement Motivation, Goal-Setting and Mental Preparation, Peaking Under Pressure) showed significant increases ($p<.05$) pretest to posttest as well. No significant changes in cumulative ACSI-28 scores were found posttest to 6-month follow up, which supports the fourth research hypothesis. The individual subscales saw no significant changes with the exception of "Peaking Under Pressure", which decreased from 8.29 to 6.94 posttest to 6-month follow up. These findings show that the participants understood the skills they were introduced to during the 8-week program and carried on with the skills after completion of the program. Qualitative data from the follow up focus group echoed this. One participant mentioned a specific drill that they do to practice the skill of concentration, "I stare at a wall for like ten minutes and try to block out everything." Another athlete talked about their continued use of goal setting and said, "[My goal is] 80mph exit velocity off the [baseball] tee by next spring." When talking about goal setting, another participant mentioned, "I probably use short term, day by day more. Each

at bat just knowing the situation and knowing what you are trying to do." Yet another participant added, "I try to use it every game. Before every at bat. Before the game."

Practical Implications

This study utilized an 8-week psychological skills training program. The program consisted of one 30-minute session per week for the duration of the program. The program was conducted during the teams' preseason, and sessions were scheduled around practice times. This setup was done to show that beneficial effects could be seen in youth baseball players with minimal time commitments. By setting the psychological skills training sessions around practice, it both ensured that attendance was high while limiting extra driving and effort from parents and coaches. Thirty-minutes was enough time to learn the basics of the skills to the point that participants could practice them outside the program (Table 2) without making the sessions feel like school, as suggested by Foster, Maynard, and Butt (2016). Therefore, future teams can replicate similar program structures for beneficial results while limiting potential objections.

Suggestions for Future Research

Future research in psychological skills training for youth baseball players should examine which components of the psychological skills training program most benefitted the participants. While the design of the current study allowed for an introduction into multiple psychological skills, doing a deeper dive into a specific skill would show more specific benefits.

Also, the current study did not employ a traditional control group. This was done due to the recruitment of several different teams that had different practice habits and drills. Different practice drills between teams (e.g., one team solely practicing hitting while another only practices pitching) would be a limitation for randomization control and experimental groups between teams. There were not enough athletes on any one team for within team randomization to have a significant effect size. Therefore, future research should utilize a psychological skills training program with either a large enough team or club organization that has similar practice habits between teams that would allow for an experimental and control group.

The current study's psychological skills training program was designed to influence baseball hitting performance. However, participants responded that they carried the skills over to other aspects including baseball pitching, school, and weight lifting. Future research should look into similar program designs and their direct influence on skills other than baseball hitting in the youth populations.

Lastly, the current study found a decrease in the subscale "Peaking Under Pressure" at the 6-month follow up. Future research should examine why skills for peaking under pressure diminish over the course of a baseball season.

Conclusion

In conclusion, this study provides preliminary evidence regarding the use of psychological skills training in elite youth baseball players. This study found significant increases in both hitting performance and Athletic Coping Skills Inventory-28 scores following a psychological skills training program. Future research should examine if

these changes were different in comparison to a control group. Furthermore, ACSI-28 scores were similar 6-months after the program. Psychological skills are a major component of most sporting endeavors, including baseball hitting. Psychological skills training is both useful and a critical component for athletes of all ages, including youth athletes.

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APPENDICES

APPENDIX B

Athletic Coping Skills Inventory-28 (ACSI-28)

Assessment of Personal Sport Psychological Skills

DIRECTIONS: A number of statements that athletes have used to describe their experiences are given below. Please read each statement carefully, and then recall as accurately as possible how often you experience the same thing. There are no right or wrong answers. Do not spend too much time on any one statement.

Please circle how often you have these experiences when playing sports.

1. On a daily or weekly basis, I set very specific goals for myself that guide what I do.
   Almost Never Sometimes Often Almost Always
2. I get the most out of my talent and skill.
   Almost Never Sometimes Often Almost Always
3. When a coach or manager tells me how to correct a mistake I've made, I tend to take it personally and feel upset.
   Almost Never Sometimes Often Almost Always
4. When I'm playing sports, I can focus my attention and block out distractions.
   Almost Never Sometimes Often Almost Always
5. I remain positive and enthusiastic during competition, no matter how badly things are going.
   Almost Never Sometimes Often Almost Always
6. I tend to play better under pressure because I think more clearly.
   Almost Never Sometimes Often Almost Always
7. I worry quite a bit about what others think of my performance.
   Almost Never Sometimes Often Almost Always
8. I tend to do lots of planning about how to reach my goals.
   Almost Never Sometimes Often Almost Always
9. I feel confident that I will play well.
   Almost Never Sometimes Often Almost Always
10. When a coach or manager criticizes me, I become upset rather than feel helped.
    Almost Never Sometimes Often Almost Always

11. It is easy for me to keep distracting thoughts from interfering with something I am watching or listening to.

Almost Never Sometimes Often Almost Always

12. I put a lot of pressure on myself by worrying about how I will perform.

Almost Never Sometimes Often Almost Always

13. I set my own performance goals for each practice.

Almost Never Sometimes Often Almost Always

14. I don't have to be pushed to practice or play hard – I give 100%.

Almost Never Sometimes Often Almost Always

15. If a coach criticizes or yells at me, I correct the mistake without getting upset about it.

Almost Never Sometimes Often Almost Always

16. I handle unexpected situations in my sport very well.

Almost Never Sometimes Often Almost Always

17. When things are going badly, I tell myself to keep calm, and this works for me.

Almost Never Sometimes Often Almost Always

18. The more pressure there is during a game, the more I enjoy it.

Almost Never Sometimes Often Almost Always

19. While competing, I worry about making mistakes or failing to come through.

Almost Never Sometimes Often Almost Always

20. I have my own game plan worked out in my head long before the game begins.

Almost Never Sometimes Often Almost Always

21. When I feel myself getting too tense, I can quickly relax my body and calm myself.

Almost Never Sometimes Often Almost Always

22. To me pressure situations are challenges that I welcome.

Almost Never Sometimes Often Almost Always

23. I think about and imagine what will happen if I fail or screw up.

Almost Never Sometimes Often Almost Always

24. I maintain emotional control regardless of how things are going for me.

Almost Never Sometimes Often Almost Always

25. It is easy for me to direct my attention and focus on a single object or person.
Almost Never Sometimes Often Almost Always

26. When I fail to reach my goals, it makes me try even harder.
Almost Never Sometimes Often Almost Always

27. I improve my skills by listening carefully to advice and instruction from coaches and managers.
Almost Never Sometimes Often Almost Always

28. I make fewer mistakes when the pressure is on because I concentrate better.
Almost Never Sometimes Often Almost Always

SCORING: This is the Athletic Coping Skills Inventory (ACSI), a measure of an athlete's psychological skills, developed by Smith, Schultz, Smoll, & Ptacek (1994). Determine your score on the following subscales by adding the scores on the question numbers identified. Also, note the following numerical scales associated with your ratings.

0 = Almost Never
1 = Sometimes
2 = Often
3 = Almost Always

Finally, note that an * after a question number signifies a reversed scored item (that is, 0 = Almost Always, 3 = Almost never, and so on).

SUBSCALES:

_____ *Coping with Adversity:* This subscale assesses if an athlete remains positive and enthusiastic even when things are going badly, remains calm and controlled, and can quickly bounce back from mistakes and setbacks.
(Sum Scores on Questions 5, 17, 21, and 24, and place the total in the blank provided).

_____ *Coachability:* Assesses is an athlete is open to and learns from instruction, and accepts constructive criticism without taking it personally and becoming upset.
(Sum Scores on Questions 3*, 10*, 15, and 27, and place the total in the blank provided).

_____ *Concentration:* This subscale reflects whether an athlete becomes easily distracted, and is able to focus on the task at hand in both practice and game situations even when adverse or unexpected situations occur.

(Sum Scores on Questions 4, 11, 16, and 25, and place the total in the blank provided).

_____ *Confidence and Achievement Motivation:* Measures if an athlete is confident and positively motivated, consistently gives 100% during practices and games, and works hard to improve his or her skills.
(Sum Scores on Questions 2, 9, 14, and 26, and place the total in the blank provided).

_____ *Goal Setting and Mental Preparation:* Assesses whether an athlete sets and works toward specific performance goals, plans and mentally prepares for games, and clearly has a "game plan" for performing well.
(Sum Scores on Questions 1, 8, 13, and 20, and place the total in the blank provided).

_____ *Peaking Under Pressure:* Measures if an athlete is challenged rather than threatened by pressure situations and performs well under pressure – a clutch performer.
(Sum Scores on Questions 6, 18, 22, and 28, and place the total in the blank provided).

_____ *Freedom from Worry:* Assesses whether an athlete puts pressure on him or herself by worrying about performing poorly or making mistakes; worries about what others will think if he or she performs poorly.
(Sum Scores on Questions 7*, 12*, 19*, and 23*, and place the total in the blank provided).

_____ *TOTAL SCORE or SUM OF SUBSCALES*

Scores range from a low of 0 to a high of 12 on each subscale, with higher scores indicating greater strengths on that subscale. The score for the TOTAL SCALE ranges from a low of 0 to a high of 84, with higher scores signifying greater strength.

After taking the ACSI, write a few sentences summarizing your results for the TOTAL SCALE and individual subscales. What areas of Psychological Skills Training do you feel you need to work on in the future?

Appendix C

Mental Skills Training Program for Elite Youth Athletes

Background:

Introduction: A Story & A Theme

Once upon a time there were five frogs sat on a log. The sun beat down upon the little froggy backs. The water of the lake lay crystal clear and inviting. Perspiration dribbled down amphibious foreheads and sweaty toes clenched tightly to the floating log. The frogs all looked knowingly at one another. Simultaneously, all five frogs ***DECIDED*** to jump into the pond. The question is: How many frogs are now sat on the log?

The answer is not the obvious – ***FIVE FROGS*** continue to sit on the log literally inviting heat exhaustion or heat cramps. The question now becomes ***WHY?***

You see the five frogs had all made a ***DECISION***, but unfortunately they had yet to make the all- important ***COMMITMENT*** to ***ACTION***. They had failed to make a ***DOCISION***. How often do we live our lives in "***PARALYSIS BY ANALYSIS***?" We sit waiting for that perfect moment to jump. Then the moment never transpires and we rue yet another missed opportunity. Have you ever had a brilliant ***IDEA*** come to mind? You think about it a lot. Maybe even consider different ways that you could develop a workable prototype and bring it to market. Then suddenly, you are up late at night watching the Home Shopping Network, and there in front of your eyes, some crack-pot inventor is waving his arms wildly around selling America on the very invention you had thought of 2 years before.

This program is all about ***NEVER*** missing an opportunity. It is also a "throw-down" and a ***CHALLENGE*** to ***LIVE*** your life rather than ***EXIST***.

Welcome to the ***MOTIVATION KICKSTARTER*** program. At the conclusion of this program you will be able to count yourself among the alumni of the ***"DOCIDE"*** family. I hope that this ***GUIDED MOTIVATION JOURNEY*** will be fun, exciting, and life-changing. Congratulations on taking the plunge – it will be the first of many great ***DOCISIONS!***

ACTIVITY – "REACH HIGHER"

Everyone reach your right arm as high as you can go. {Watch as everyone stretches the right hand to the sky}. Take a look at how high your fingers are stretching. Note the height they are at. Now I want you all to REACH HIGHER. {Watch as everyone will be able to find a little extra to stretch their fingers a little higher}. Okay everyone relax and shake out your arms. I noticed that every single hand found a little bit extra to reach and stretch just that little bit higher. So it is with physical and mental readiness. Training hard physically and mentally allows you to be prepared to reach a little harder and higher when your body requires it. This extra reach could be the difference between a trophy, a personal best, a tournament championship, or perhaps even a spot at the World Series. Now everyone raise up your left hand. Stretch as high as you can possibly go. {Usually everyone is focused on truly committing now to the activity}. That is full commitment and now you are mentally ready to commit to preparing your mind for optimal performance.

Program: 8 Week Mental Skills Training Program

Baseball Athletes Mental Skills Training Program – THEME = "DOCIDE!"

WEEK	*MENTAL SKILLS*	*CURRICULUM FOCUS*	*ASSESSMENT*
WEEK #1	**ORIENTATION** • What is Mental Skills Training • Intake Forms • Introductions & Questions	Introduction to Mental Skills Training and an explanation of the program and expectations. Chance to collect forms and answer questions.	Intake Forms ACSI-28 (Smith, Schutz, Smoll, & Ptacek, 1995)
WEEK #2	**SELF-TALK** • Motivational Self-Talk • Positive Affirmations • Thought Stopping	Teaching athletes the skills related to self-talk strategies including use of positive affirmations, thought parking, thought stopping, and use of motivational cue words.	
WEEK #3	**GOAL SETTING** • Performance Goals • Process Goals • Outcome Goals • Planning for Success	Early development of goal setting skills using a "SMARTER" model to build personal short-term and long-term objectives. Focus on the importance of having performance and process goals in addition to outcome goals.	Goal Setting Worksheet
WEEK #4	**MENTAL TOUGHNESS** • Control • Commitment • Challenge • Confidence	Mental Toughness can be defined as the ability to perform under pressure. Mental toughness is also the ability to bounce back from adversity and the innate ability to triumph in the face of obstacles and limitations.	
WEEK #5	**FOCUS & CONCENTRATION** • Distraction Control • Attentional Focus • Attentional Skills	Skill-based training program designed to educate, inform, develop, and practice focus and concentration skills relevant to ball sports. Special attention given to attentional focus, disassociation, and distraction control.	Concentration Exercises
WEEK #6	**MENTAL IMAGERY** • Mental Recall • Mental Rehearsal • Imagery Training	Build upon the self-talk (affirmations) strategy and relaxation techniques in exploring mental recall and mental rehearsal intervention focused on optimal performance.	
WEEK #7	**HANDLING SETBACKS** • Positive Self-Talk • Growth Vs. Fixed Mindset • Hardiness & Grit	Exposure to a wide variety of skills to help athletes handle adversity and set-backs. Short discussion of growth mindset vs. fixed mindset. Focus on techniques and tools.	
WEEK #8	**PUTTING IT ALL TOGETHER** • Making DOCISIONS • Other Resources • Termination	Allow for a synthesis of learning through a development of a future plan grounded in a DOCISION philosophy with real action steps and purpose. Exposure to future MST resources.	Post-Test ASCI-28 End of Season Meetings

ASCI-28 Self-Assessment

Give athletes the ACSI-28 assessment. The ACSI measures seven psychological skills (coping with adversity, coachability, concentration, confidence and achievement motivation, goal setting and mental preparation, peaking under pressure, freedom from worry) (Smith, Schutz, Smoll, & Ptacek, 1995). Explain to the athletes that this is a self-assessment of mental skills and allows the athletes an opportunity to pinpoint some of the problem areas inherent in their mental readiness. {Be sure to follow-up individually with each athlete in interpreting their scores}.

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WEEK #2	**SELF-TALK** • Motivational Self-Talk • Positive Affirmations • Thought Stopping	Teaching athletes the skills related to self-talk strategies including use of positive affirmations, thought parking, thought stopping, and use of motivational cue words.	

Baseball Mental Skills Program

Self-Talk

Self-talk is the ***INTERNAL CONVERSATION*** every athlete has within their own head. All athletes enter into a private dialogue and sometimes this conversation is ***POSITIVE*** and sometimes this conversation is ***NEGATIVE***. Athletes that engage primarily in positive self-talk already start with a psychological advantage over those athletes that primarily experience negative self-talk.

Advantages & Limitations of Self-Talk

Positive Self-Talk	***Negative Self-Talk***
Motivation for initiating action	Persuades athletes to resist getting started
Motivation for sustaining action	Convinces athletes to give-up
Motivation for putting forth a superior effort	Settling for average or mediocre performance
Motivation for embracing a success mindset	Encouragement to just avoid failure
Instruction to learn new skills	Promoting a belief that learning something new is impossible
Instruction to practice and refine new skills	Belief that new skills are unattainable
Encourages a growth mind-set	Fosters a scarcity mind-set
Promotion of self-confidence	Promotes feelings of inadequacy
Promotion of performance excellence	Acceptance of current situation
Promotion of optimal arousal states	Allows negative emotions to influence play
Promotion of optimal concentration states	Feeds internal distraction
Instills a sense of mental and emotional well-being (joy, happiness, and mindfulness)	Fosters mental and emotional chaos (anxiety, stress, frustration, fear, and doubt)

Question becomes – *Which athlete do you desire to be more like? The athlete on the left or the athlete on the right?* Each athlete may be naturally gifted and technically skilled. However, only one athlete of the two is positive, equipped to grow, predisposed towards being successful, and genuinely in control of their emotions and behaviors.

Paralysis by Analysis

Paralysis by Analysis can be called "Mental Procrastination." When we are consumed by negative thoughts that focus on all the reasons why something cannot or should not happen we can find ourselves getting stuck. Sometimes athletes run an internal dialogue program that focuses on fears, doubts, and self-defeating thoughts. These negative feelings and emotions can be enough to stop the athlete from striving toward performance excellence.

Strategies for Use of Effective Self-Talk

(1). THOUGHT STOPPING

All day we are bombarded with a wide variety of thoughts. As an athlete sometimes these thoughts are occasionally negative and detrimental to performance. ***Thought Stopping*** is a skill and an awareness exercise. Athletes choose a word such as "STOP," "OUCH," "FOCUS," or "BROCCOLI" and when a negative thought creeps in, the athlete can use the cue word mentally or even out loud to catch and terminate the negative thought. This strategy creates awareness of negativity and allows athletes the opportunity to change an instance of negative self-talk to positive self-talk. Below are included some possible substitutions an athlete could use to counter the negative self-talk:

Negative Self-Talk	***Positive Self-Talk***
I suck at hitting	I am competent hitter
I hate the way I look	I am an athletic woman
I am never going to be good enough to play	I work hard every day to get better
I am never going to be able to recover	I am a strong athlete and recover quickly
Everyone on this team hates me	I love being with my team-mates
I should just quit and be done with this team	I am so blessed to be able to play my sport

Exercise: *Let the athletes throw out some of the negative thoughts that sometimes occupy their minds. Have team-mates come up with positive self-talk substitutes for the negative thoughts.*

Emphasis: Mikes (1987) as cited in Weinberg & Gould (2015) suggest six (6) rules for using self-talk as it relates to effective execution of sport performance:

(1). Keep phrases short
(2). Use first person and present tense
(3). Use only positive phrases and language
(4). Say phrases with meaning and intention
(5). Speak kindly and encouragingly to self
(6). Repeat phrases often

(2). SELF-AFFIRMATIONS

The previous section suggested six rules for using positive self-talk in executing sport skills. These same six rules can also be used in helping to formulate positive self-affirmations which is also a form of self-talk. Self-affirmations can be used to prepare an athlete for performance, set up a success mind-set, foster commitment to high expectations, and an invaluable tool for projecting goals and future successes. Mohammed Ali, the great boxer told everyone ***"I AM THE GREATEST!"*** Guess what? He became the heavyweight champion of the world.

Curtis (1988) developed a Mental Conditioning Program that has four parts:

(1). Relaxation

(2). Positive Affirmation Statements

(3). Mental Recall

(4). Mental Rehearsal

He says of positive self-affirmations: *"Positive affirmation statements are short sentences which implant in your subconscious mind ideas which are designed to enhance self-image, achieve a positive mental attitude, or help lead you toward a specific goal. They are statements which affirm a belief you want to feed to your subconscious mind. They can be used to counterbalance and overcome the negative thoughts that we so often focus on with our self-talk...The more often the statements are repeated, the more rapid and noticeable the desired effect will be" (p. 49-50).*

Examples of Positive Affirmation Statements:

- I am a skilled baseball player
- I love baseball
- I will hit .300 for the season
- I will help my team win a Championship this season
- Practice makes me stronger
- I enjoy going to practice and being with my team-mates
- My coaches respect me
- I am a strong player

Exercise: *Let the athletes come up with two or three of their own self-affirmations. Distribute cards and ask the athletes to write these affirmation statements in large letters on the cards. Then have the athlete line up facing one another and in very loud booming voices trying to outdo those opposite them – shout out aloud each one of their affirmations five consecutive times.*

(3). THOUGHT PARKING

Explain to athletes that sometimes a negative life-event or negative self-talk can just not turn off. A preoccupation with negative life events or a negative life situation can cause significant impairment of performance. Introduce the athletes to the concept of ***THOUGHT PARKING***. The skill simply gives the athlete permission to park a negative thought, self-talk, or event until the practice or sporting contest has ended. Explain that this can be done mentally or physically.

Exercise: *Give every athlete an envelope and a small card. Have the athletes place on the card a negative thought or a struggle, limitation, or obstacle that might be currently*

causing them some distress. Have the athlete place the card in the envelope and seal it up. Explain that this is symbolic of parking the thought or event. After practice or competition, the athlete can then open the envelope and commit emotional and mental resources to the challenge.

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WEEK #3	**GOAL SETTING** • Performance Goals • Process Goals • Outcome Goals • Planning for Success	Early development of goal setting skills using a "SMARTER" model to build personal short-term and long-term objectives. Focus on the importance of having performance and process goals in addition to outcome goals.	

Baseball Mental Skills Program

Goal-Setting

THREE TYPES OF GOALS

There are three (3) different types of goals – all of which play a unique and complementary role in helping a person stay on track.

(1). OUTCOME GOALS
(2). PERFORMANCE GOALS
(3). PROCESS GOALS

OUTCOME GOALS are the terminal goals that an athlete sets for desired team or individual performance. For college and professional teams this might include winning a National Championship, a Conference Ring, a Divisional Pennant, an Olympic Medal, or a World Title. Outcome goals, while an essential piece of the goal-setting program, are by themselves often not enough to inspire optimal performance.

PERFORMANCE GOALS are the individual goals that allow the athlete to measure progress over time using self and past performance as the evaluative comparison. For example, a clean-up hitter might have a career best batting average of .315 and creates a performance goal to hit .330 this season. A football player has a bench press max of 280lbs and sets a performance goal to lift 300lbs before the opening day of the season. Perhaps a softball player has a best season hitting average of .290 and sets a performance goal to hit .350 for the next year.

PROCESS GOALS are often considered "***PRACTICE GOALS***" or "***STEPPING-STONE GOALS***" that help an athlete toward achieving the outcome and performance goals. One can argue that ***PROCESS*** goals are the most important because they set the foundation for optimal performance. Typical categories of process goals might relate to core strength, flexibility, mental skills training, nutrition, gaining adequate recovery, sleep, simulation training, and injury prevention. A process goal for a college baseball player might include securing a minimum of 8 hours of sleep every night for the duration of the competitive season. The baseball player might also have a process goal of completing an average of 100 swing each practice/per week during the pre-competition period.

Goal-Setting is one of the very core principles of Sport Psychology. Goals are specific objective statements that define exactly what a performance target is to be. A common mnemonic device for remembering how to write meaningful ***GOALS*** is the word – ***SMARTS!***

SMARTS refers to writing goals that are ***SPECIFIC***, ***MEASURABLE***, ***ACTION-ORIENTED***, ***REALISTIC***, ***TIME-BOUND***, & ***SELF-DETERMINED***. All too often, coaches make the mistake of articulating goals for the athlete. These goals then become the coach's goals with little investment from the athlete themselves. If athletes are empowered to establish standards of excellence and performance they are far more likely to engage fully in the goal-setting process.

Other common errors in goal-setting are to make goals too general with no objective criteria by which to measure successful completion. For example, a basketball player might have the goal of pushing harder in the pre-season. What does "pushing harder" mean? Does this refer to strength and conditioning, aerobic endurance, improving free-throw percentage, taking more jump shots, or playing more physical during open-gym sessions? Perhaps a player who has a low free-throw percentage might define pre-season goals as:

(1) Shoot 200 free throws every day in practice from September 1st till November 1st.
(2) Increase free throw percentage in practice from 60% to 75% by November 1st.
(3) Increase leg strength, as measured by front squat, by 15% by November 1st.
(4) Run sub 6 minutes in the mile run by November 1st.

Note that the above four goals all contain action words (Shoot, Increase, and Run). These goals also include specific dates for the pre-season period and realistic targets for the basketball player to pursue.

S.M.A.R.T.S of Goal Setting

Effective GOAL-SETTING is accomplished when goals are written in an effective, meaningful and SMART manner:

S = Specific

M = Measurable

A = Action-Oriented

R = Realistic

T = Timeframe

S = Self-Determined

Goals should be ***SPECIFIC*** and articulate what you are focused on and what you desire to accomplish.
Goals should be ***MEASURABLE*** and allow you to identify progress and accomplishment.
Goals should be ***ACTION-ORIENTED*** and identify ***DOCISIONS*** and steps toward completion.
Goals should be ***REALISTIC*** and challenging that promote growth and pushing one's comfort zone.
Goals should have a ***TIME-FRAME*** that defines when the target outcomes should be completed by.
Goals should be ***SELF-DETERMINED*** which means they should be ***YOURS*** and no one else's.

Complete Goal-Setting Worksheet

Goal Setting Worksheet

Choose Three (3) OUTCOME Goals You Want to Achieve in the Next Six (6) Months: (Ex: Finish with the highest batting average at the end of the season).

(1) _____

_____

(2) _____

_____

(3) _____

_____

Choose Three (3) PERFORMANCE Goals You Want to Achieve in the Next Six (6) Months:
(Ex. Hit two more home runs than last year by April 5th).

(4) _____

_____

(5) _____

_____

(6) _____

_____

Choose Three (3) PROCESS Goals You Want to Achieve in the Next Six (6) Months: (Ex: Maintain an average of 8 hours of sleep/night every week from November to May).

(7) _____

_____

(8) _____

_____

(9) _____

_____

GOAL COMMITMENT:

On a SCALE of 1 to 10, how committed are you to achieving each of the nine (9) goals above?

1 2 3 4 5 6 7 8 9 10

(If any are NOT a "10" re-evaluate goal and decide "why not," and whether you need to revise or drop it).

GOAL LIMITATIONS:

What potential obstacles and roadblocks do you see as limiting your ability to achieve success?

_____

_____

_____

_____

(What can you do to offset and remove those obstacles and limitations?)

GOAL SUPPORT

List TWO (2) places you will post your goals for this season?

(1). _____

_____

(2). _____

_____

List TWO (2) people you will share your goals with and will hold you accountable for those goals?

*(1).*_____

*(2).*_____

GUIDELINES FOR GOAL REALIZATION

(Dahlkoetter, 2004)

1. ***Establish personal goals***
2. ***Put your goals in writing***
3. ***Choose a goal partner***
4. ***Establish a time frame***
5. ***Build flexibility into your goals***
6. ***Evaluate effort as well as performance***
7. ***Visualize your goal***
8. ***Create positive affirmations for each goal***
9. ***Evaluate your plan and reinforce your progress***
10. ***Build enjoyment into your goal (establish a personal reward for achievement)***

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WEEK #4	**MENTAL TOUGHNESS** • Control • Commitment • Challenge • Confidence	Mental Toughness can be defined as the ability to perform under pressure. Mental toughness is also the ability to bounce back from adversity and the innate ability to triumph in the face of obstacles and limitations.	

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MENTAL TOUGHNESS

"The most important attribute a player must have is mental toughness" – Mia Hamm

Mind Gym

Mack & Casstevens (2001) suggest that Mental Toughness is the combination of seven (7) very important behaviors or beliefs one carries:

(1). Competitiveness – "Competitors take bad breaks and use them to drive themselves just that much harder" (p.25).

(2). Confidence – "Confident athletes have a can-do attitude, a belief they can handle whatever comes their way. They almost never fall victim to self-defeating thoughts" (p.26).

(3). Control – "Successful athletes are able to control their emotions and behavior. They focus on what they can control and don't allow things that are out of their control to affect them. The hallmark of mentally tough athletes is the ability to maintain poise, concentration, and emotional control under the greatest pressure and the most challenging situations" (p.26).

(4). Commitment – "Mentally tough athletes focus their time and energy on their goals and dreams. They are self-directed and highly motivated" (p.26).

(5). Composure – "Mentally tough athletes know how to stay focused and deal with adversity" (p.27).

(6). Courage – "A mentally tough athlete must be willing to take a risk…it takes courage to grow up and to achieve your full potential" (p.28).

(7). Consistency – "Mentally tough athletes possess an inner strength. They often play their best when they're feeling their worst. They don't make excuses" (p.28).

Definition of Mental Toughness

Ask group –

WHAT DO YOU BELIEVE IS THE DEFINITION OF MENTAL TOUGHNESS?
WHO ON THIS TEAM IS MENTALLY TOUGH? WHY?
ARE YOU NATURALLY BORN MENTALLY TOUGH?
Or
CAN YOU LEARN AND DEVELOP MENTAL TOUGHNESS?

Study by Jones (2002) on Mental Toughness

Jones (2002) conducted a study investigating how ten elite international athletes defined ***"MENTAL TOUGHNESS"*** They defined the concept as:

Mental toughness is having the natural or developed psychological edge that enables you to:

(1). Generally, cope better than your opponents with the many demands (competition, training, lifestyle) that sport places on a performer;

(2). Specifically, be more consistent and better than your opponents in remaining determined, focused, confident, and in control under pressure.

The study identified 12 ATTRIBUTES to MENTAL TOUGHNESS (Jones, 2002):

(1). Having an unshakable self-belief in your ability to achieve your competition goals.
(2). Bouncing back from performance set-backs as a result of increased determination to succeed.
(3). Having an unshakable self-belief that you possess unique qualities and abilities that make you better than your opponents.
(4). Having an insatiable desire and internal motivation to succeed.
(5). Remaining fully focused on the task at hand in the face of competition-specific distractions.
(6). Regaining psychological control following unexpected, uncontrollable events.
(7). Pushing back the boundaries of physical end emotional pain, while still maintaining technique and effort under distress (in training and competition).
(8). Accepting that competition anxiety is inevitable and knowing that you can cope with it.
(9). Thriving on the pressure of competition.
(10). Not being adversely affected by others' good and bad performances.
(11). Remaining fully focused in the face of personal life distractions.
(12). Switching a sport focus on and off as required.

GOING TO THE WELL!

Tell the Donkey Story…

A donkey was strolling through a field grazing on the green grass. Suddenly the ground caved in and he fell into an old well shaft. He fell with an almighty splash into the shallow water of the disused well. He brayed at the top of his voice but no one could hear him. Finally, many hours later the farmer went out to look for him. He found his faithful donkey trapped at the bottom of the well. He tried to cast a rope down the shaft but to no avail. It was too dangerous to climb down. The farmer disappeared for a few hours and came back with his sons who all carried shovels. The donkey was excited to see the farmer had gone to get more help. Surely soon he would be saved...and then it started raining. The donkey shook the droplets from his shaggy mane but then realized these droplets were not water...it was raining soil. The farmer and his sons with heavy hearts were filling in the will. They had given up any hope of rescuing donkey. He was being buried alive. At that moment the donkey had a choice. At first he felt sorry for himself and let the soil fall around him and on top of him. The water started to get muddy and firm underneath him. He wriggled up on to firmer ground. As the next shovel of soil splashed down on his head he shook it off and stepped on up. Another shovel and he shook it off and stepped on up. Every time a shower of soft earth landed on his head he shook it off

and stepped on up. So it continued for several hours until donkey suddenly started to see daylight. A few shovels more and donkey shook it off and stepped on up until he stood triumphantly eye-to-eye with the surprised farmer and his sons. You see the donkey wasn't a quitter. He was mentally tough and took action. He made a DOCISION to LIVE!.

GOING DEEP TO THE WELL!

How much like the donkey are we prepared to be when adversity hits? How courageous will we be? How likely are we to "shake it off" and "step on up?"

EASY LIVING – Just Existing
COMFORT ZONE – Living in a Bubble
DISCOMFORT ZONE – Gently Pushing One's Own Limits
RISK-TAKING ZONE – Experimenting with Courage and Valor
GROWTH ZONE – Pursuing One's True Potential
MENTAL TOUGHNESS ZONE – Point of No Return to Excellence

4 C's of Mental Toughness

(1). CONTROL -- Self-Awareness of believing **I CAN DO IT.** Belief that I can control my emotions and focus on what is within my own control.

(2). COMMITMENT -- Goal-Orientation – **I PROMISE TO DO IT.** Desire to do whatever it takes to achieve one's goals.

(3). CHALLENGE -- Obstacles as opportunities – **I AM DRIVEN TO SUCCEED.** I can learn from experience and use set-backs as opportunities to learn.

(4). CONFIDENCE -- Total **BELIEF** in one's self – ***I BELIEVE I WILL ACHIEVE GREATNESS.*** I can be an example to others and stand my ground.

Strategies to Building MENTAL TOUGHNESS

SELF-TALK

("Out-Loud" Personal Dialogue – Have athletes speak positively out loud all at the same time for one whole minute)

SELF-AFFIRMATIONS

(Have every athlete write down or state a self-affirmation)

MINDFULNESS

(Have athletes identify a single TRIGGER WORD to use to snap back focus)

CONCENTRATION & FOCUS

(Countdown activity from 5 to 1 thinking the numbers BIG and FLASHING in the mind)

AROUSAL REGULATION

(Noisy breathing activity – loud inhales + louder exhales)

Final Quote

"I may win and I may lose, but I will NEVER be defeated.
– Emmitt Smith

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WEEK #5	**FOCUS & CONCENTRATION** • Distraction Control • Attentional Focus • Attentional Skills	Skill-based training program designed to educate, inform, develop, and practice focus and concentration skills relevant to endurance sports. Special attention given to attentional focus, disassociation, and distraction control.	Concentration Exercises

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FOCUS & CONCENTRATION

"Fully connected focusing and refocusing skills are essential for ongoing positive learning, performing your best consistently, living your dreams, and achieving your highest levels of excellence"

– Terry Orlick

"Concentration is the secret of strength"

- Ralph Waldo Emerson

Concentration Story

Once upon a time a boy was born in 1903 in Bainbridge Ohio. He grew up fascinated by stories of wild animals. As a teenager, he left home and joined the circus. His first job involved cleaning the cages of lions and tigers. Over the next few years he earned an opportunity to become a trainer for the animals. His most famous act was "a fighting act" where wild animals would enter the ring and he would tame them. One famous segment involved bringing out lions, tigers, cougars, and hyenas all at the same time. Audiences were drawn to this spectacle in large part because of the danger and the fact that many animal tamers were killed by animals they worked with. Clyde Beatty however lived into his 60's and actually died of cancer. How did he manage to survive all those years in the circus ring? He had a simple idea – he never entered the ring without a chair. Most animal tamers of the era used a whip but Clyde was one of the first to enter the ring with a chair. Although everyone in the audience focuses on the whip it is largely for showmanship. The important and life-saving work is done by the chair. When the animal trainer holds a chair in front of the tiger's face, the tiger attempts to focus on all four legs at the same time. This divided attention causes confusion and doubt. Faced with paralysis by analysis the tiger will usually freeze and wait rather than attacking the chair or trainer. How often do we

as athletes experience this same momentary paralysis as a distraction causes us to freeze or become inactive. In fast moving sports this can be the difference between a win and defeat.

Michael Johnson – Olympic 200m & 400m Champion states:
"I have learned to cut all unnecessary thoughts on the track. I simply concentrate. I concentrate on the tangible – on the track, on the race, on the blocks, on the things I have to do. The crowd fades away and other athletes disappear and now it's just me and this one lane."

DEFINING FOCUS & CONCENTRATION
Ask group –

WHAT DO YOU BELIEVE IS THE DEFINITION OF FOCUS & CONCENTRATION?
WHY IS THIS SKILL SO DIFFICULT?
CAN THIS SKILL BE TRAINED?

CONCENTRATION

"The ability to maintain focus on relevant environmental cues. When the environment changes rapidly, attentional focus must also change rapidly. Thinking of the past or future raises irrelevant cues that often lead to performance errors" (Weinberg & Gould, 2015, p. 372).

- Focus on Relevant Environmental Cues
- Maintaining Attentional Focus
- Maintaining Situational Awareness
- Shifting Attentional Focus

ATTENTIONAL FOCUS
Attentional Focus can extend along two dimensions that are ***WIDTH*** (Broad & Narrow) and ***DIRECTION*** (External & Internal).
(1). ***Broad Attentional Focus*** – Athlete perceives multiple cues at the same time – open field action.
(2). ***Narrow Attentional Focus*** – Athlete perceives a single cue such as a golfer lining up a tee shot.
(3). ***External Attentional Focus*** – Directs attention to an outward object such as the ball in basketball.
(4). ***Internal Attentional Focus*** – Directs attention inward on thoughts and feelings or game analysis.

ATTENTIONAL PROBLEMS

Internal Distracters	*External Distracters*
Attending to Past Events	Visual Distracters
Attending to Future Events	Auditory Distracters
Choking Under Pressure	Crowd Noise
Overanalysis of Body Mechanics	Referees or Officials
Fatigue	Weather and/or Temperature
Inadequate Motivation	Physical Environment & Facilities
Negative Emotions	Coaches or Team-mates
Fear and/or Doubt	Gamesmanship

ACTIVITIES FOR IMPROVING CONCENTRATION & FOCUS

(1). CONCENTRATION NUMBER GRID *– Athletes are given a number grid that includes numbers ranging from 1 to 100. Athletes are given 90 seconds to try and find sequentially as many numbers as possible beginning with 1 and moving upwards toward 100. After 90 seconds the athletes must stop and put their pen down.*
Activity is then done again with 90 seconds on the clock. Distraction is then added to the activity to try and throw off concentration. Athlete numbers are calculated to see under which conditions did the athletes show the greatest success on.

(2). FOCUS ACTIVITY *– Athletes are asked to focus their full attention on a dot that is drawn on a white board. A cross is also drawn to the right of the circular dot. Athletes are asked to focus completely on the dot and ignore any other distraction or image. They are told to avoid looking at the cross at all times. Periodically during a 2-minute period remind the athletes that the cross is also on the board. Discuss how easy it was to focus on just the dot. Why did concentration waver? Why is 2 minutes so difficult a time to hold full focus and concentration?*

(3). MENTAL FLASH NUMBERS *– Have athletes close their eyes and imagine a large stadium clock with 60 seconds on it. Have the athletes see the clock count down from 60 to zero. Have the athletes stand up when they believe 60 seconds are up. Talk about the ability to concentrate in real time. Reward the athlete who was closest to one minute.*

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WEEK #6	**MENTAL IMAGERY** • Mental Recall • Mental Rehearsal • Imagery Training	Build upon the self-talk (affirmations) strategy and relaxation techniques in exploring mental recall and mental rehearsal intervention focused on optimal performance.	

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MENTAL IMAGERY – "WYSIWYG" – {What You See Is What You Get!}

"I always won in my imagination. I always hit the game-winning shot, or I hit the free throw. Or if I missed, there was a lane violation, and I was given another one"
- Mike Krzyzewski (Olympic Gold Medal Basketball Coach)

Frank Shorter – Olympic Marathon Champion states:
"A good athlete always mentally replays a competition over and over, even in victory, to see what might be done to improve the performance the next time."."

DEFINING MENTAL IMAGERY
Ask group –
WHAT IS MENTAL IMAGERY? HOW WOULD YOU DESCRIBE MENTAL IMAGERY?
WHEN CAN ATHLETES USE MENTAL IMAGERY?
WHAT IS THE PURPOSE OF MENTAL IMAGERY?

MENTAL IMAGERY
"Visualization is the process by which we recreate experiences in our minds using information stored in memory. Effective visualization is promoted by a vivid imagination…Therefore the more you can control your imagination, the more you can expect to control your performance…if you can see it, you can create it; if you can feel it, you can perform it; if you can imagine it, you can achieve it" (Karageorghis & Terry, 2011, p. 170).

Imagery is a form of mental simulation that utilizes all of the senses to create a real sensory experience in the mind. This experience tricks the subconscious to the point the brain does not always know what is real and what is imagined.
Senses Used in Effective Imagery = Auditory sense, Visual Sense, Olfactory sense, Tactile Sense, Kinesthetic sense, & Proprioceptive sense.

Uses of Imagery (Weinberg & Gould, 2015, pp.307-309)

(1). Improve Concentration
(2). Enhance Motivation
(3). Build Confidence
(4). Control Emotional Arousal
(5). Acquire, Practice & Correct Skills
(6). Acquire & Practice Strategy
(7). Prepare for Competition
(8). Cope with Pain and Injury
(9). Solve Problems
(10). Create Positive Expectations for Success

Keys to Effective Imagery

(1). CONTROLLABILITY
(2). VIVIDNESS

Internal vs. External Imagery

INTERNAL IMAGERY = Seeing the execution of the skill through one's own eyes as if a GoPro camera was attached to the head. This first-person perspective emphasizes actually feeling the sensations of completing the skill.

EXTERNAL IMAGERY = Seeing the execution of the skill through the eyes of a spectator or a 3rd party as if you were observing yourself in a movie. Greater emphasis is on cognitively evaluating and analyzing a skill rather than the kinesthetic sense of the skill.

When is it Appropriate to Use Imagery

(1). Before & After Practice
(2). Before & After Competition
(3). During the Off-Season
(4). During Breaks in the Action
(5). During Rest & Recovery Time
(6). When Recovering from Injury

(1). JUICY ORANGE ACTIVITY *– Athletes are asked to close their eyes. Visualize holding a large juicy orange. Have the athletes imagine themselves peeling the orange. The skin peels easily and the juice immediately begins to flow over the fingers. Experience the fresh orange-y smell that comes from the fruit and the rind. See the vibrant orange fruit that is revealed as the bright orange rind is peeled back. Gently pull a segment away from the middle. Place the segment in your mouth. Experience the explosion of sweetness and flavor take over your mouth. Slowly chew the orange piece enjoying the juicy sensation of the segment dissolve in your mouth. Experience the swallowing of the piece of fruit.*

ASK athletes about their experience. Who was able to see the orange clearly in their mind's

eye? Who could smell the orange? Who could taste the orange? Who experienced salivation

in their mouth?

Explain that the orange is NOT real, yet the brain still believed the fruit was in our hands. The

fact that our mouth conjured up saliva is a testament to the power of visualization. We are able

to have very real sensory experiences in our mind that can help prepare us for executing a

future skill. Explain that we are going to introduce today a basic baseball skill – Hitting the ball.

(2). VISUALIZATION Beginning Step "The Baseball Bat" *– Begin by deeply concentrating your attention on a simple object such as a "Baseball Bat."* ***{HAVE AN ACTUAL BAT FOR THE ATHLETES TO SEE}.*** *With eyes open, stare at the baseball bat for 60 seconds. Study the baseball bat's shape, color, form, and details. After 60 seconds, shut eyes and try and re-create the picture in your mind. Try and clearly re-create its shape, its form, its color, its details. Hold on to the image as tightly as you can. Visualize holding the bat, swinging the bat, and hitting the ball with the bat.*

(3). VISUALIZATION Advanced Step "The Hit" *– With eyes open observe an example of athletes completing an effective baseball at-bat. Take in the details observe the fluidity of movement. Follow the movement of the bat as it swings and connects with the ball. Observe the swing in slow motion and then observe the swing at regular speed.* ***{HAVE COMPETENT ATHLETES DEMONSTRATE THE EFFECTIVE baseball swing}.*** *After a few minutes of observing the skill, have athletes shut their eyes. Have them focus on the feelings of swinging the baseball bat. See the ball approaching and focus attention on the task of swinging the bat and connecting with the ball. Observe this happening at speed. See oneself executing the skill perfectly. Move the visualization to becoming the baseball batter and feel what it is like to hit the ball.*

VISUALIZATION STORY

Once upon a time there lived a great circus performer by the name of Karl Wallenda. He was a German-American born in 1905 as part of a large circus family. From the age of 6 years old he started participating in trapeze routines and daring tightrope walks without the aid of a safety harness. He traveled across the country and the world performing amazing feats of balance and concentration. One of his greatest assets and skills was his ability to visualize perfect execution of performance. In 1970 at 65-years of age he completed a 400m skywalk across the Tallulah Gorge watched by over 30,000 people. Four years later he set a then world record of 550m at Kings Island. He was a remarkable athlete with incredible focus, concentration, and visualization abilities. In preparation for every event he would visualize perfect execution for weeks and months leading up to the day. Then in 1978 he was scheduled to perform in San Juan Puerto Rico. The challenge was to walk between the two towers of the Condado Plaza Hotel, a fairly small distance of almost 40 meters. There were high winds that day and Wallenda lost his balance and fell ten stories to his death. The whole event was captured on live

television. In an interview with his wife following the tragedy, she told reporters that for the first time in his life, her husband found it difficult to visualize success with the challenge he was about to undertake. He was so plagued by doubt and negative images that he himself went to check the cables before the event, something that he never did. The take-away is that negative imagery can be very destructive. In order to be truly successful, one should train the mind to picture only positive execution of performance with no doubt, fear, or negativity attached to the imagery.

Final Quote

"Dreaming means 'rehearsing' what you see, playing it over and over in your mind until it becomes as real to you as your life right now."

- ***Emmitt Smith (NFL Player with the Dallas Cowboys)***

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WEEK #7	**HANDLING SETBACKS** • Positive Self-Talk • Growth Vs. Fixed Mindset • Hardiness & Grit	Exposure to a wide variety of skills to help athletes handle adversity and set-backs. Short discussion of growth mindset vs. fixed mindset. Focus on techniques and tools.	

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HANDLING SETBACKS

"Nobody hands you excellence on a silver platter. You earn it through planning, preparing, and persisting in the face of all obstacles." – Terry Orlick

Paul Stoltz wrote a book called the Adversity Quotient. In this book he compares success to a mountain. Those that choose to challenge themselves to reach the summit are the ***CLIMBERS****. Along the trail to the summit are* ***CAMPERS****. These individuals started on the trail but got side-tracked or just gave up. These individuals will never feel the thrill of victory, the sense of accomplishment, and the feelings of pride and vitality as those who stayed the course and triumphed by standing atop the mountain. So the question is...****ARE YOU A CLIMBER or a CAMPER?***

Growth Mindset vs. Fixed Mindset

Carol Dweck (2006) established an interesting dichotomy between a ***"FIXED MINDSET"*** and a ***"GROWTH MINDSET"***. A Fixed Mindset "assumes that our character, intelligence, and creative ability are static givens which we can't change in any meaningful way and success is the affirmation of that inherent intelligence." A Growth Mindset, "thrives on the challenge and sees failure not as evidence of unitelligence but as a heartening springboard for growth and for stretching our existing abilities." "Out of these two mindsets, which we manifest from a very early age, springs a great deal of our behavior, our relationship with success and failure in both professional and personal contexts, and ultimately our capacity for happiness."

So what does this mean for athletes?

Athletes often have self-imposed limitations which can be identified as "FIXED MINDSET" issues. These limitations, obstacles, fears, and inhibitions will PARALYZE an athlete. Furthermore, an athlete with this mindset will often experience discouragement and negativity in the face of adversity, loss or failure. Oftentimes recurrent poor performances, bad results, or plateaus will lead athletes with a Fixed Mindset to quit their sport.

Athletes identified as having a "GROWTH MINDSET" such as Siu Nga Ching the Hong Kong race-walker mentioned in the above story, will be MOTIVATED by adversity and look for creative ways to still achieve success even if obstacles, limitations, and difficulties lie in their path.

SO WHICH ATHLETE IS MORE LIKE YOU? Which mindset would you like to cultivate – A Fixed Mindset or a Growth Mindset?

TECHNIQUES & SKILLS TO HANDLE PERFORMANCE ERRORS & SET-BACKS

(1). Positive Self-Talk

There is NO substitute for positive self-talk using language that is forward thinking, encouraging, motivating, optimistic, and goal-oriented. Cultivating a positive dialogue with oneself is the most important technique in managing emotions, feelings, and

thoughts centered around adversity, performance errors, and set-backs. One positive self-talk strategy is to use self-affirmations or key-word statements that reinforce a positive sense of self no matter what the result of an athletic performance:

Examples:

I am a highly trained athlete
I love training and playing my sport
I am committed to being the very best athlete I can be.
I will train harder to meet my personal goals.

What words do we exchange with our best self? What words do we then take out to the world? What language and words do we use when we talk to spouses, family, friends, work associates, team-mates, and children? ***WORDS*** have ***POWER***. Words can ***BUILD*** or they can ***DESTROY***. Wars have been fought as a consequence of words. Families, communities, and nations have been destroyed because of antagonistic words.

Self-talk is a reflection of what we believe about the world around us. If our self-talk is largely positive, enthusiastic, loving, and motivational then this is the world that we live in. If our self-talk tends be more negative, pessimistic, self-deprecating, and limiting then this is more likely the world that we choose to live in. Negative self-talk can be self-defeating and can sabotage our happiness and the happiness of others. Athletes that believe they will fail will fail. Athletes who tell themselves they will miss the free throw or penalty will obligingly meet their own expectations. Businessmen who believe they will fail to get the deal will walk out of the negotiations empty-handed. A young woman who tells herself that she is unworthy of the love of a kind, unselfish, nurturing, and compassionate boyfriend might find herself unwittingly drawn to relationships that are emotionally toxic and physically abusive.

Below, I have a suggestion for two great self-talk activities you can try today:

EXERCISE 1: Self-Talk Flip

Negative Self Talk		Positive Self Talk
Ex. I am fat and out of shape	(change to)	Ex. I am excited to exercise
Ex. I am a horrible student	(change to)	Ex. I work hard in school

Take a pen and paper out and list some of those things that frequently come to mind as negative self-talk comments. Then write down how you could change the wording to reflect a more positive future-oriented instruction that moves you forward. This activity can be used very easily with activity #2.

(2). Thought Parking/Thought Stopping

One of the amazing things about competitive sports is that you cannot be a truly GREAT athlete unless you lose a little along the way. Babe Ruth hit 714 home runs. However, he also struck out 1,330 times. Michael Jordan hit more buzzer beaters than anyone in NBA history. However, he also missed more buzzer beaters than anyone in NBA history. So what strategies do you have set up to prepare you for when things do not go your way?

Thought Stopping – Key words or phrases that anticipate or prevent negative self-talk from occurring. A word as simple as "STOP" can make a huge difference in reframing a negative thought into a learning thought.

Thought Parking – We are always going to have negative thoughts and feelings and sometimes negative life events that might impact our ability to play to our very best ability. Sometimes taking those thoughts and negative feelings and placing them in an envelope in our locker is the best way to symbolically give ourselves permission to put a thought on hold until we can take ownership of it at a later date.

EXERCISE 2: THOUGHT STOPPING

As you go through today, choose a word or phrase that you are willing to use to "***STOP***" a negative thought that creeps into your mind. For instance, if you are at work and your supervisor is reprimanding you try not to allow his comments to become a negative self-talk conversation. If you find yourself thinking something like "I am a dreadful employee," or "I can never get this job right," catch yourself in the moment and use your ***TRIGGER WORD*** to stop the thought from developing. You could use the word "***NO***," or "***STOP***," or "***I REJECT THAT THOUGHT***," or "***POSITIVE***," or "***HAPPY***." You could even use a fun word like "***POKEMON***" or "***CABBAGE***." Once you have recognized the negative self-talk that is occurring in the moment, start to make a habit of flipping it into a more positive statement like you did in Exercise 1.

Remember ***THOUGHTS*** become ***THINGS***. What you think about will ultimately become manifested in your ***BEHAVIORS*** and ***ACTIONS***. Even our ***EMOTIONS*** and ***FEELINGS*** are directly related to what we THINK about and what we SAY to ourselves. Really work on the internal dialogue being more positive, enthusiastic, and genuinely optimistic.

(3). Mental Recall

Every athlete can recall a moment of excellence and accomplishment in either practice or competition. Using a mental recall technique to live in the positive space even after a negative event has occurred provides great benefits. The following are some key principles to carrying out a successful Mental Recall:

- Select a recall experience or experiences in which you performed perfectly
- Recall the experience in as much detail as possible
- Relive the experience from inside the body – just as it actually happened
- Use the proper speed
- Carry each recall experience through to completion
- Rehearse daily
- Stay alert

Final Quote

"When an archer misses the mark, he turns and looks for the fault within himself. Failure to hit the bulls-eye is never the fault of the target. To improve your aim, improve yourself." – *Unknown*

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WEEK #8	**PUTTING IT ALL TOGETHER** • Making DOCISIONS • Other Resources • Termination	Allow for a synthesis of learning through a development of a future plan grounded in a DOCISION philosophy with real action steps and purpose. Exposure to future MST resources.	Post-T & End of S Meeti

Baseball Mental Skills Program

WEEK 8 – As with all good seasons, all good MST programs must also end as some point. The hope is that everyone who participated is armed with a whole host of new resources that will help athlete's move towards achieving their full potential.

What Now?

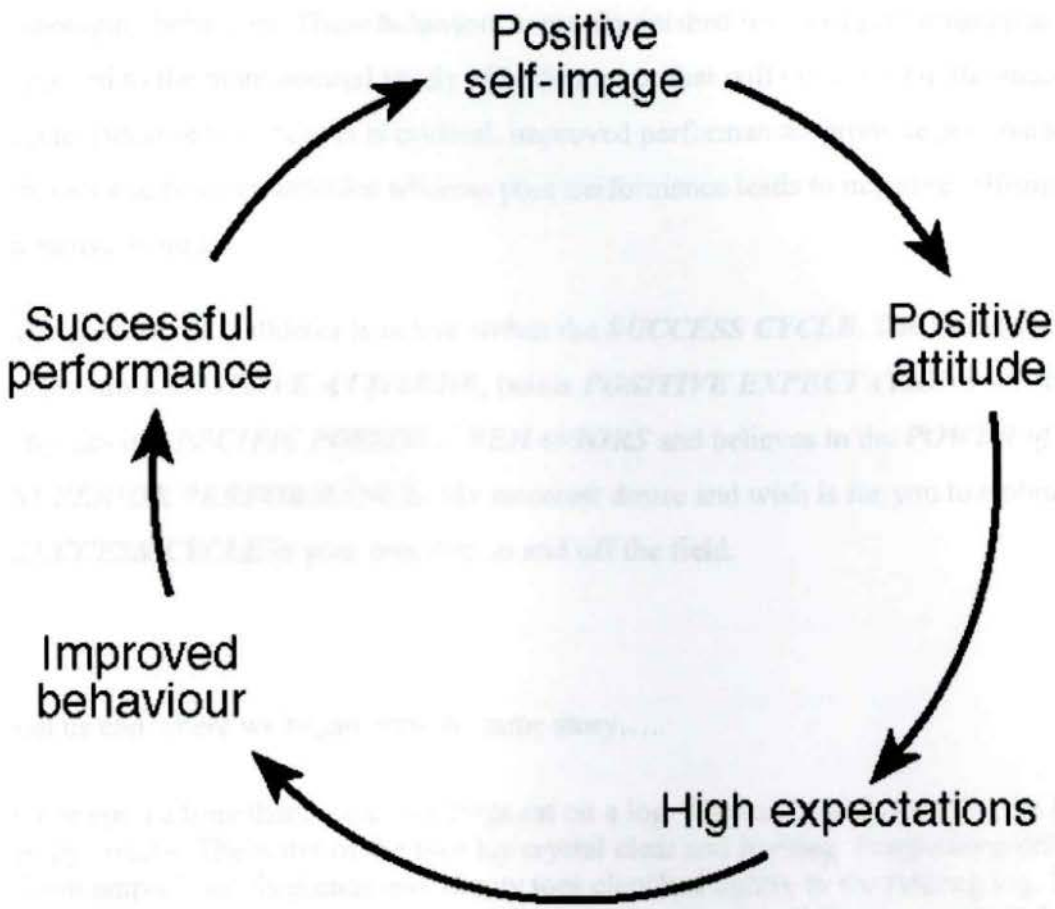
Over the course of this Mental Skills Program, we have practiced different skills that all can relate to improved performance in baseball. Now we need to find a way to incorporate these skills into every practice and our daily life. Just like you would practice the skill of hitting a baseball or catching the ball, these mental skills require practice also to get better.

One way to incorporate several of these skills that seem useful to you specifically is to create a **PRE-PERFORMANCE ROUTINE**. This is simply a routine that you follow either before every game or right before going to bat or pitch. The routine does not have to be long and complicated. A few slow, deep breaths, saying your self-affirmation statement "I am a good hitter", and then visualizing yourself hitting the ball is all that it takes to get your mind right while on deck.

Your final exercise is to find a routine that is **SPECIFIC** to you. Make sure that it is quick and easy to do and most importantly it gets your **mind in the right state** to perform, meaning your are **relaxed**, **positive**, and **believe** that you will succeed.

WHAT NEXT?

Let us explore the ***SUCCESS CYCLE:***



Everyday, in different areas of our life, we are continuously working through a success or failure cycle. The graphic above represents the more positive of the two cycles. Great athletes, successful businessmen, inspired teachers, competent working professionals, and talented students know the value of a positive self-image. Our self-identification and how we view ourselves is central to the success cycle. Generally, individuals that see themselves in a positive light will manifest a positive attitude in their activities of daily living. An athlete with high self esteem and a healthy positive self-image will likely have a positive attitude about practice, games, relationships, and even setbacks such as poor performance or injury. When a person has a positive attitude they expect to be successful. Their expectations are optimistic and centered on what can be as opposed to worst case scenarios. Positive expectations then leads to positive behaviors that build up the individual and those that are around them. The antithesis of improved behaviors are self-

sabotaging behaviors. These behaviors cause diminished levels of performance as opposed to the more optimal levels of performance that will occur within the success cycle. Because this process is cyclical, improved performances promote positive self images and positive attitudes whereas poor performance leads to negative self-image and negative attitudes.

The goal for ***ALL*** athletes is to live within the ***SUCCESS CYCLE***. The successful athlete maintains a ***POSITIVE ATTITUDE***, builds ***POSITIVE EXPECTATIONS*** for self, engages in ***SPECIFIC POSITIVE BEHAVIORS*** and believes in the ***POWER of SUPERIOR PERFORMANCE***. My sincerest desire and wish is for you to embrace the ***SUCCESS CYCLE*** in your own life on and off the field.

Let us end where we began with the same story…..

Once upon a time there were five frogs sat on a log. The sun beat down upon the little froggy backs. The water of the lake lay crystal clear and inviting. Perspiration dribbled down amphibious foreheads and sweaty toes clenched tightly to the floating log. The frogs all looked knowingly at one another. Simultaneously, all five frogs ***DECIDED*** to jump into the pond. The question is: How many frogs are now sat on the log?
The answer is not the obvious – ***FIVE FROGS*** continue to sit on the log literally inviting heat exhaustion or heat cramps. The question now becomes ***WHY?***
You see the five frogs had all made a ***DECISION***, but unfortunately they had yet to make the all- important ***COMMITMENT*** to ***ACTION***. They had failed to make a ***DOCISION***.

HOW HAS THIS STORY CHANGED IN MEANING TO YOU NOW THAT YOU HAVE COMPLETED THE MST PROGRAM?

Appendix D

Goal Setting Worksheet

Choose Three (3) OUTCOME Goals You Want to Achieve in the Next Six (6) Months:

(1) _____

(2) _____

(3) _____

Choose Three (3) PERFORMANCE Goals You Want to Achieve in the Next Six (6) Months:

(4) _____

(5) _____

(6) _____

Choose Three (3) PROCESS Goals You Want to Achieve in the Next Six (6) Months:

(7) _____

(8) _____

(9) _____

GOAL COMMITMENT:

On a SCALE of 1 to 10, how committed are you to achieving each of the nine (9) goals above?

GOAL LIMITATIONS:

What potential obstacles and roadblocks do you see as limiting your ability to achieve success?

_____

_____

APPENDIX E

Concentration Number Grid

71	91	63	79	31	01	92	21	43	69
12	80	65	74	36	84	54	89	52	11
73	93	90	81	33	03	44	23	45	68
04	34	67	70	22	48	56	02	32	13
75	95	46	83	35	05	82	25	47	57
94	06	98	24	14	64	58	53	72	15
77	97	26	85	37	07	16	27	49	61
28	50	00	30	20	62	60	55	66	17
10	40	59	87	39	09	96	29	51	41
08	18	42	38	76	99	88	78	86	19

71	91	63	79	31	01	92	21	43	69
12	80	65	74	36	84	54	89	52	11
73	93	90	81	33	03	44	23	45	68
04	34	67	70	22	48	56	02	32	13
75	95	46	83	35	05	82	25	47	57
94	06	98	24	14	64	58	53	72	15
77	97	26	85	37	07	16	27	49	61
28	50	00	30	20	62	60	55	66	17
10	40	59	87	39	09	96	29	51	41
08	18	42	38	76	99	88	78	86	19