

Performance Slumps and Out-of-Season Training for High School Athletes

by

Kyle Fiat

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Abstract

Abstract

The purpose of this study was to determine if out-of-season strength and speed training programs impact performance slumps for high school-aged athletes. The measurement tool for the study was game statistics that already were being recorded. The statistics that were analyzed were give-away's, take-away's, contested 50/50 balls, and touches on the ball. This study was a causal comparative study analyzing performance slumps for athletes who participated in an out-of-season strength and speed training program as compared with performance slumps of those students who did not participate in such a program. There was no significant difference in performance slumps recorded for the Spring 2013 semester for those athletes who participated in an out-of-season training program compared with slumps for those who did not participate. Studies related to this topic should continue as there has been little research done on the impact of out-of-season training impacting in-season performance slumps.

CHAPTER I

INTRODUCTION

Overview

Throughout all levels of sports, coaches strive to prepare their athletes to perform at the highest level possible during every competition. Athletes train tirelessly both mentally and physically in preparation for their competitive season. They spend numerous hours training for these competitions. Grove and Stoll (1998) state, “Individuals who participate in sport devote considerable time and effort to the development of physical skills, and they derive personal satisfaction from successful competitive performances” (p. 203). Although coaches strive to train their athletes to perform as consistently as possible, performance slumps occur. These slumps, or periods of declining or losing play, are discouraging for athletes and teams. Athletes’ outlook on their competitive situation often impacts their ability to perform.

A variety of factors such as injury, coach-athlete relationship, fatigue, and anxiety can contribute to performance slumps. If coaches become aware of these causes and help prepare athletes to avoid these situations, then the athletes should be able to experience more consistency in their play that may result in greater achievement of individual and team goals.

Statement of Problem

The purpose of this study was to examine high school athletes’ performance consistency throughout their athletic season, and determine if off-season preparation would help to improve their performance consistency.

Null Hypothesis

There will be no significant difference in the number of performance slumps throughout the season between athletes who participated in an out-of-season training program and athletes who did not participate in an out-of-season training program.

Operational Definitions

In relation to sports, performance means executing and accomplishing some action to help fulfill the goal of the team.

For purposes of this study, a slump in soccer is defined by four statistics. Players had statistics taken on the number of touches they had on the ball throughout the game. Statistics also were taken on the number of contested 50/50 balls with which each player was involved. Athletes also had statistics taken on the number of give-away's they had per game, as well as the number of take-away's. A give-away is defined as losing possession of the ball to an opponent. A take-away is defined as taking a possession away from an opponent.

Off-season training is defined as physical speed and strength training in preparation for in-season performance. The coach provided the prescribed workouts in which athletes were able to document and track their records by recording improvement in their lifting workouts as well as their running workouts.

CHAPTER II

REVIEW OF THE LITERATURE

This literature review will examine issues related to performance slumps among athletes. The first section of the review explains the importance and relevance of studying the topic of performance slumps among athletes. Section two reviews the impact of performance slumps on athletes. The final section discusses strategies to reduce the incidence of performance slumps among athletes.

The Importance and Relevance of Addressing Performance Consistency in Athletics

Athletes train tirelessly both mentally and physically in preparation for their competitive season. They commit to numerous hours of skill development, mental preparation, physical training, and other actions that might provide opportunities for success. Grove & Stoll (1998) state, “Individuals who participate in sport devote considerable time and effort to the development of physical skills, and they derive personal satisfaction from successful competitive performances” (p. 203). Not only do athletes spend an extensive amount of time developing physical skill, athletes and coaches alike have begun to understand the importance of the development of relationships amongst the team. As Cho, Choi, & Huh (2013) state, “Research has indicated that how athletes perceive and evaluate their relationship with their coach affects attitude, motivation, and even emotional response” (p. 1548). This impact on athletes’ attitudes, motivations, and emotional responses has a significant connection to the preparation of athletes based on their relationship with their coach. Coaches strive to

train their athletes to perform as consistently as possible, as well as develop quality relationships with their athletes, but still slumps occur.

Injury is another aspect of sport that creates opportunity for performance slumps. As Adegbesan & Ogu (2013) discuss, “Fear of injury is always present for all athletes. It is suggested that fear of injury results in physiological and psychological changes that impact performance and ultimately increase the risk of actual injury” (258). Not only is the fear of injury always present, but the fear of re-injury can have a significant impact on the performance of an athlete.

Off-season training is defined as physical speed and strength training in preparation for in-season performance. According to Tomljonovic, Spasic, Gabrilo, Uljevic, and Foretic (2011) “Functional training programs should be designed to imitate activities and movement patterns that occur in an athlete’s characteristic activity. The purpose should be to make training adaptations more specific and, therefore, more applicable” (p. 145). This means off-season training programs should be tailored towards the activities that the athlete will perform during their season.

The anxiety of an athlete can influence his or her performance during competition to a great extent. Based upon Alexander and Krane’s research, Martens, Burton, Vealey, Bump, & Smith (1990) developed the multidimensional anxiety theory. They offered the reflections that follow.

“Competitive anxiety contains two subcomponents: cognitive and somatic anxiety. Cognitive anxiety is characterized by negative thoughts, inability to concentrate, and disrupted attention. Somatic anxiety is one’s perceptions of their

physiological arousal such as rapid heart rate, tense muscles, and butterflies in the stomach” (Alexander & Krane, 1996, p. 247).

Both cognitive anxiety and somatic anxiety influence an athlete’s performance. Mental imagery and positive talk are among the many strategies that can be used by coaches to help decrease the level of anxiety that athletes might feel during competition.

Athletes’ outlook on their competitive situation often impacts their ability to perform. Merriam-Webster defines optimism as, “an inclination to put the most favorable construction upon actions and events or to anticipate the best possible outcome” (Merriam-Webster.com). Gaudreau and Blodin (2004) state, “Optimistic people are expected to display greater effort to reduce the discrepancy between a situation and a desired goal” (p. 245). In their study, *Differential Associations of Dispositional Optimism and Pessimism with Coping, Goal attainment, and Emotional Adjustment During Sport*, they hypothesized that “optimism would lead to greater use of task-oriented coping during the competition, which in turn, would yield greater levels of goal attainment and post-competition positive affective states” (p. 245). When athletes maintain a positive outlook and anticipate the best possible outcome, they prepare themselves for consistent play.

Whether the sport is an individual sport or a team sport, competition relies on the performance of individuals. Grove and Stoll (1998) reflect that “stress-related slumps among athletes come from many different correlates” all of which could negatively impact the performance of the individual, (p. 204). Each individual athlete might respond differently to various correlates. If the performance of an individual athlete decreases, then the likelihood of winning also decreases. In a team setting, all teammates rely on the

performance of each athlete to work toward the accomplishment of winning the competition. In an individual setting, the performance of that athlete will determine his or her ability to accomplish the goal of winning the competition. Both coaches and players alike need to be aware of their preparation for consistent play so all may work cooperatively toward reaching the goal. When this preparation is overlooked or not addressed, the performance of the individual athlete likely will decrease.

Coaching is a very competitive profession at any level, from the professional athletic context to the collegiate and secondary school context to recreational sports. Sports have become an important and meaningful part of the nation's culture and many youth learn important life lessons through sports that are of value to them throughout their lives. Coaches endeavor to prepare their athletes for competition. The more fully coaches understand their athletes and their preparation the more likely it is that their athletes will be prepared for consistent performance.

As Tomljanovic et al. (2011) state in their study of functional vs. resistance training, "both types of training have a purpose for improvement in certain areas" (p. 149). This study suggests that "functional training mostly affected postural control in which precise control of the kinematic outcomes of explosive movement are necessary" (p. 145). The study also examined traditional resistance training (TRT). According to Tomljanovic et al., "TRT typically is designed to isolate individual muscles using free weights in supported and/or stable positions or machine-based training protocols" (p. 145).

In a study by Cox, Shannon, McGuire, and McBride (2010), the authors discuss how "self-confidence and freedom from worry are reliable predictors of performance" (p.

145). Gradeau and Blodin (2004) discuss “the relationship of optimism and performance and how a positive outlook positively impacts performance” (p. 245). As coaches understand the impact of different approaches to training, the impact of self-esteem, and the impact of optimism, it is important for them to examine their sport and determine which type of preparation produces the most positive impact for their sport. Some coaches may find that results from multiple preparation methods should be used for their sport.

When athletes are performing consistently from game to game throughout a season, their level of performance becomes an expectation. They have acquired a level of confidence that allows them to reach expected levels of performance from one competition to the next. A study conducted by Witt, Linkenauger, and Proffitt (2012) examined participants’ putting ability in golf and how the athletes’ perception of hole sizes impacted their performance. The researchers observed, “There is a link between perceived hole size and performance which increased confidence in their abilities which in turn improved performance” (p. 398). When athletes reach the point of perception where their confidence is extremely high, whether it is through strength and speed training, low levels of anxiety, or high levels of optimism, they perceive their sport in a way that promotes consistent play.

The Impact of Performance Slumps

Athletes who lack speed and strength, suffer from anxiety, and have a pessimistic outlook likely will suffer from performance slumps. An athlete could demonstrate all of these characteristics, or just one. Regardless of how many factors they experience, they still can experience inconsistency in their performance. The athlete could perform at a

high level during certain competitions, but see a drop of performance during other competitions. As Witt et al. (2012) describe in their study of the perception of the size of a golf hole when putting, “perception of the size of the golf hole created confidence which in turn improved performance” (p. 398). Without this perception of a “larger hole,” the athlete may lack confidence and could show a decrease in performance.

Although coaches and athletes would like performance to be consistent at all times, some factors could foreshadow performance inconsistencies. Grove & Stoll (1998) noted, “relevant background information could be used to predict performance slumps among athletes” (p. 210). An athlete’s level of stress, regardless of cause, likely will impact the consistency of his or her performance from game to game, and may result in performance slumps. Both athletes and coaches need to work together in their preparation, learning and understanding as much background information as possible.

Interventions to Decrease Performance Slumps among Athletes

Coaches implement many different interventions to decrease the number of performance slumps for athletes throughout the season. Off-season speed and strength training, anxiety-management exercises, and supporting athlete’s level of optimism are three specific interventions that coaches use.

Off-Season Training

Off-season speed and strength training can be used as an intervention to help improve athletes’ performance consistency. Slumps may be caused by athletes’ fatigue during competition. Reflecting on the results of their study of athletic training, Laursen and Jenkins (2002) observe that, “A larger impact was made from interval training on individuals who were recreationally active rather than those who were highly trained

endurance athletes” (p. 69). This study suggests how important high-intensity training for developing athletes is in improving performance consistency throughout their season. If athletes plan to perform at the highest level possible, their training needs to reflect that same level of performance during competition.

Taha and Thomas (2003) conclude, “Any training session increases fitness and provokes a fatigue response” (p. 1061). If this fatigue response is experienced only during competition, then the athlete’s performance will be impacted negatively because of the athlete’s lack of practice during periods of fatigue. If the athlete participates in training sessions on a regular basis, thus frequently creating this fatigue response, the likelihood of consistent performance over that period increases. Coaches often talk about practicing like you play. As Taha and Thomas’s study indicated, the level of intensity during practice impacts the level of play during games, which supports the idea of practicing like you play.

Helping Athletes Manage Anxiety

Anxiety can be a cause of performance slumps for athletes. This anxiety could be produced by many different factors including a lack of confidence, pressure from the competition, injury, or fear of failure. Alexander and Krane (1996) categorized anxiety into two different categories: somatic anxiety and cognitive anxiety. “Somatic anxiety refers to the response to the competitive environment where cognitive anxiety forms through evaluative cues, negative feedback, and negative performance expectations” (p. 248). Both types of anxiety have been shown to impact performance of an athlete. The stress that causes anxiety may be different from game to game, resulting in inconsistency of play. This stress may have different causes from game to game.

Supporting Athletes' Level of Optimism

Optimism is hoping for the best possible outcome. A study conducted by Gaudreau and Blodin (2004) discussed the relationship between “goal attainment and emotional adjustment” (258). More positive thoughts during competition result in an increase in goals being achieved which results in greater consistency in performance. Based upon the results of this study, it appears that as the mental state of an athlete begins to fluctuate, performance begins to become inconsistent. Given the extent of physical training and preparation done by athletes, their attitude prior to and during competition could have a great impact on their performance.

Summary

Athletics have become an important and influential component of our society. Many lifelong lessons can be learned through athletics. From recreation levels through professional levels, athletes are privileged to have the opportunity to compete at the highest level they possibly can. Great athletes are those individuals who compete at a high level and are able to maintain that high level of performance over a period of time. The best professional athletes are characterized by their high level of play over an entire career. When examining these great players' careers, the consistency of their performance from game to game is analyzed. Inconsistency in performance from week to week can be caused by many different factors. Common factors related to inconsistent athletic performance include not participating in out-of-season strength and speed training, experiencing anxiety during competition, or not having an optimistic outlook on their competitive situation. Studies such as those related to fatigue response (Taha & Thomas, 2003), somatic anxiety and cognitive anxiety (Alexander & Krane, 1996), and

emotional adjustment influencing goal achievement (Gaudreau & Blondin, 2004) provide helpful examples of factors that influence performance throughout an athletic season. If coaches and athletes become aware of these causes, and prepare to avoid these situations, then the athletes should be able to experience more consistency in their play that may result in greater achievement of team goals.

CHAPTER III

METHODS

Design

This study was a causal comparative study that examined the impact that out-of-season speed and strength training programs have on in-season performance slumps for a high school boys' soccer team.

Participants

There were 24 athletes on the boys' soccer team, but by the end of the study there were only 11 athletes who had enough statistics available to be included in the study. Of these 11 students, four (36%) participated in an out-of-season speed and strength training program and 7 (64%) did not participate in the speed and strength program.

Instrument

Rather than using an assessment instrument for this study, the researcher used measures (game statistics) that already were being collected. A high school-aged manager collected these statistics from the soccer team. Although this manager worked hard to collect accurate statistics, the possibility for error in the statistics does apply. The data were analyzed to help determine if and how performance slumps occurred throughout the season.

Procedure

During this study, performance statistics for each athlete who was on the field from the varsity soccer team of a 4A high school in Baltimore County were collected. Nearly half of the team (and nearly half of the starters) participated in an out-of-season speed and strength training program while the other half did not. This study examined the

impact that out-of-season training programs have on performance slumps throughout the season. Athletes were not provided specific instructions as they made the choice whether or not they participated in the out-of-season training program. The team manager was given instructions on keeping game statistics to make the statistics as reliable as possible. The manager took statistics on give-away's, take-away's, contested 50/50 balls, and touches on the ball. Each player had the four statistics totaled and averaged to determine his average statistical number for each category for the eight games. These statistics then were examined using an independent t-test.

CHAPTER IV

RESULTS

The purpose of this study was to determine whether out-of-season strength and speed training programs would impact in-season performance slumps for high school-aged soccer players. Statistics were collected for these soccer athletes in the following categories- take-away's, give-away's, contested 50/50 balls, and touches on the ball. The null-hypothesis, which stated that there would be no significant difference in the number of performance slumps throughout the season between athletes who participated in an out-of-season training program and athletes who did not participate in an out-of-season training program, was supported. Table 1 shows the shows the means and standard deviations for the two groups.

Table 1. Means and Standard Deviations of Performance Slumps for the Groups

Out-of-Season Training Group	No Out-of-Season Training Group
15.00 (2.16)	13.29 (2.21)

An independent t-test was used to determine if there was a significant difference in performance slumps based on whether or not an athlete participated in out-of-season training activities. Results supported the null hypothesis and indicated that there was no significant difference in performance slumps, $t(9) = .003, p > .05$. Their results and implications will be discussed in the next chapter.

CHAPTER V

DISCUSSION

The purpose of this study was to determine whether out-of-season strength and speed training programs would impact in-season performance slumps for high school-aged soccer players. The null hypothesis in this study was supported, as there was no significant difference in the number of performance slumps throughout the season between athletes who participated in an out-of-season training program and athletes who did not participate in an out-of-season training program.

Implications of Results

The results of the study confirm the hypothesis, as there was little difference in performance slumps amongst athletes who participated in out-of-season training programs and those who did not. Although previous studies have suggested that out-of-season strength and speed programs improve general positive outlook, performance ability, and injury prevention, in this study, such programs did little to improve performance consistency throughout a season. The results indicate that although out-of-season training programs could be beneficial for athletes, in this study they did little to improve performance consistency throughout an athletic season for the identified sample.

Theoretical Consequences

The theoretical consequences of this study include considerations regarding how coaches and athletes prepare for their season, the types of preparation provided, and strategies used to assist athletes to perform at high levels. Although increased speed and strength have been proven to improve ability and performance, the results from this study

suggest that in some instances, out-of-season training in these areas does not improve performance consistency throughout the season.

Threats to Validity

There were several factors that could have affected the validity of the results of this study. The first threat to the validity of the study relates to the independent variable, participation in an out-of-season strength and speed program or not participating in an out-of-season strength and speed program. Because this was a causal comparative study, the decision made by the athletes regarding whether or not to participate in the training program already had occurred when statistics related to the athletes' performance were recorded. With this being the case, Airasian, Gay, & Mills (2006) state, "the research group was already formed and already differed in terms of the independent variable" (p. 218). The independent variable was determined by the student/athletes determining whether they would participate in the out-of-season training programs. This was a threat because the researcher had no impact on who participated in the programs and who did not.

The second threat to the validity of the study was data collection consistency. The study was based on four soccer statistics: take-away's, give-away's, contested 50/50 balls, and touches on the ball. Although these four statistics give a comprehensive representation of the performance of a high school soccer player, they can be very difficult to record. With so many opportunities to record a statistic, the manager needed to be very attentive and efficient in his recording. Although recording the statistics was done as accurately as possible given the situation, there could have been instances where statistics were missed throughout the games.

Another threat to the validity of the study deals with data collection consistency of every game during the high school season. On two occasions during the season, the researcher expected to receive statistics from games but no statistics had been recorded. The first time the researcher was not able to get game statistics resulted from the illness of the team manager, and the researcher was unable to get a substitute statistician. The second time the researcher was unable to get statistics was from a game that occurred on a school day when the game had a 7:30 pm start time at a location that was an hour bus ride from the school. The coach told the manager that he did not need to attend the game because the team would be arriving back at the school at a very late time. Again, the researcher was unaware of the manager not attending the game so he did not get a substitute statistician. If all regular season games would have had statistics taken, the results might have been different.

The third threat to the validity of the study was sample size or the actual number of athletes for whom statistics were recorded so they could be included in the study. There were 11 players out of a total of 24 players on the team who participated in an out-of-season strength and speed program. Once data were collected and analyzed, the researcher identified those students for whom enough statistics were available to include them in the study. The researcher determined that only 11 players could be included in the study. Four (36%) of the 11 participated in an out-of-season speed and strength training program and seven (64%) of the 11 did not participate in the speed and strength training program. Being able to include such a small number of players in the study may have affected the results, although the researcher had no influence on the number of players who had enough statistics to be included in the study.

Connections to Previous Studies/Existing Literature

There were no clear connections to existing literature linking the impact of out-of-season training programs with performance consistency throughout a season. However, many studies have been done analyzing athletes' reasons for performance slumps. These studies have identified causes such as injury (Adegbesan & Ogu, 2013), coach-athlete relationship (Cho et al., 2013), anxiety (Alexander & Krane, 1990), or outlook on the athletic situation (Gaudreau & Blodin, 2004). The researcher also found studies examining the relationship of strength and speed programs to explosiveness, speed, and injury prevention. However, the researcher was not able to find studies connecting strength and speed training programs with performance slumps throughout a season.

Implications for Future Research

The findings in this study suggest that out-of-season strength and speed programs do not have an impact on performance slumps of high school male soccer players during the season. There was no significant difference between performance slumps for those athletes who participated in these out-of-season programs and those athletes who did not participate in the programs.

Future research on this topic could include a team of statisticians to enable more accurate statistics to be taken. The researcher in this study relied on one statistician to record all statistics for all the games during the season. Future researchers could assign one statistician per statistic being recorded to create more accurate statistics and to provide substitutes if a manager gets sick or cannot attend a game.

Conclusion/Summary

The null hypothesis for this study stated there would be no significant difference in the number of performance slumps throughout the season between athletes who participated in an out-of-season training program and athletes who did not participate in an out-of-season training program. The results of the study supported the null hypothesis. Athletes who participated in the training program did not have fewer slumps than those who did not participate. Coaches and athletes look for different methods of improving performance and maintaining that improved performance throughout an entire season. The results of this study suggest that out-of-season speed and strength training programs have little impact on performance consistency throughout the season. Future research should provide opportunities for more accurate recording of statistics by using a team of statisticians instead of just one, as was the case in this study.

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