ADMINISTRATIVE GUIDE: LEADING COACHES IN AN ANTERIOR CRUCIATE LIGAMENT INJURY PREVENTION PROGRAM

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Educational Leadership and Administration Option

by
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ADMINISTRATIVE GUIDE: LEADING COACHES IN
AN ANTERIOR CRUCIATE LIGAMENT INJURY
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ABSTRACT

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Anterior Cruciate Ligament (ACL) injuries are prevalent among student athletes, primarily females. Athletic administrators can play an important role in a high school student athlete’s career by addressing the importance of injury prevention. The athletic administrator’s role is to bridge the gap between the knowledge of healthcare providers and that of high school athletic coaches, parents and student athletes. This project focuses on the leadership strategies and duties of an athletic administrator for implementation of programs that optimize the health and potential of student athletes.

The model program within this project addresses the causes, recovery, and prevention of ACL injuries. The program was developed with the assistance of an
athletic trainer and feedback from high school athletic administrators. A program consisting of six exercises was created for administrators to have their coaching staff implement into their practice schedule. The model ACL injury prevention program was sent to high school athletic administrators along with a survey to gain feedback about whether their school currently has any injury prevention programs, whether they consider using this one, and how they would implement it with their coaching staff. Using the feedback, a plan was created for athletic administrators on how to carry out this program at their school.

The administrative plan for this project uses a Direct Informational Approach for educational leadership, which involves eliciting the coaches’ opinions and participation. This program gives the administration the guidance of how to implement the program with the coaching staff by using the expertise of healthcare providers or athletic trainers. Athletic administrators would then take the steps to share the importance of this program with student athletes and their parents.
CHAPTER I

INTRODUCTION

Purpose of the Project

As an administrator in an academic or athletic setting, it is important to be aware of past and present issues occurring in schools daily. Preparing a coach or staff member is crucial for the success of the student athlete and his or her time spent at school. The health and wellbeing of a student athlete will affect their performance in the athletic environment and in the classroom.

Sports have evolved over the years. There have been numerous changes to help protect student athletes in practice and competition settings. The majority of contact sports require a source of protection such as pads, guards, or helmets as part of the uniform. Likewise, there is a protocol for high school and collegiate student athletes to have current physicals in order to be cleared for active participation in their particular sport. Health care providers, such as a doctor or athletic trainer, are usually available to student athletes if injuries occur during practice or competitions. At the high school and collegiate levels, student athletes who are injured need to be evaluated and cleared by a health care provider in order to return to active participation.

Athletic administrators and coaches also contribute to the success of an athletic program. It is imperative that all of these individuals, health care providers,
administrators, and coaches, know the rules and regulations for the sport they are supervising.

It is essential that administrators develop programs to educate their staff and provide current information about issues dealing with academics, athletics, and injuries. This can also be an opportunity to inform parents and coaches about important topics. Preseason meetings should cover general information and educate the audience about athletic concerns either locally or nationally. Some of these topics may include discussions about injuries, such as concussions or Anterior Cruciate Ligament (ACL) injuries, and how to prevent them. Parents, student athletes, and coaching staff should understand what methods of prevention will be used and the expectations for these programs. Although this information will not certify parents or coaches in any medical area, it will be extremely helpful in certain circumstances.

Part of being an administrator is taking a stance on important issues and being able to clearly explain that standpoint to other people. According to Sergiovanni (2005), being a successful leader consists of management attributes:

In order to be successful, leaders will have to master eight basic competencies: the management of attention, the management of meaning, the management of trust, and the management of self, as well as the management of paradox, the management of effectiveness, the management of the follow-up, and the management of responsibility. (p. 142)

When mastering these competencies, staff will be more willing to support and implement a program that promotes the safety and wellbeing of student athletes. The responsibility of a coach is to help student athletes be successful in their prospective sport and encourage academic success. There is a cause and effect situation when coaches take the initiative to optimize the potential of the team by keeping student athletes healthy and
injury free. Healthy student athletes are more likely to succeed in their selected sport than an individual trying to overcome injuries. That is a significant reason to implement an injury prevention program. Another reason is that a healthy student athlete is more likely to succeed in the classroom since significant injuries can cause a student athlete to miss school.

Scope of the Project: Description

The Anterior Cruciate Ligament is located in the knee. When this ligament is torn, surgery and extensive physical rehabilitation are required to repair it. ACL injuries among female athletes are increasingly common and, although they cannot be eliminated, the frequency of their occurrence can be reduced.

Athletic administrators can use the ACL prevention program created for this project as a model for their athletic staff to use when developing their own injury prevention program. When the causes and effects of concussions are discussed, one clearly understands why a federal policy has been implemented in both college and high school athletic programs to prevent them. Although there is no current federal policy for ACL injury prevention, administrators can take a proactive approach on this issue.

Being involved with athletics all my life, I have seen multiple injuries impede student athletes’ participation in sports. Eliminating all injuries is not possible; however, if there is an opportunity to prevent common injuries, it is important for administrators and coaches to learn how to do that. I have created a group of exercises high school coaches can apply in their daily training and practice sessions to prevent ACL injuries among student athletes.
In the process of developing an ACL injury prevention program, I will show how concussions have been addressed by the media to raise awareness among the public about this issue. There are many parallels between concussion and ACL injury prevention. My intention is to take a proactive approach surrounding this escalating problem of ACL injuries among female athletes, although it is not yet publicized regularly to the public. The goal of this ACL Injury Prevention Program is to help minimize the number of ACL injuries that occur regularly in high school athletics. While at the same time, having the program be easy enough for athletic administrators and their coaching staff to implement.

Significance of the Project

As an aspiring administrator, I wanted to create a program that would be worthwhile to implement in a proactive manner in an athletic organization. An injury prevention program model that athletic administrators can utilize to guide their coaching staff is one topic of significance. This program will be beneficial for high school student athletes nationwide.

With any physical activity or athletic participation there is potential for injury (both minor and severe) to occur. One particular injury that has received a significant amount of media and school attention across the nation due to its frequency is concussion. A concussion is a brain injury that may be caused by a blow to the head, face, neck or elsewhere on the body with an “‘impulsive’” force transmitted to the head” (California State University, Chico, n.d.). The National Collegiate Athletic Association (NCAA) is an association that oversees all intercollegiate athletics. It has drafted a
memorandum for all colleges and universities in the nation to help clarify the proper procedure to be used when a concussion occurs. This protocol is mandated for the protection of the school and athletic department in the case of a detrimental injury. “The policy came from ongoing review of research data and discussion with the medication community” (Runkle, 2010, p. 1). The NCAA policy states,

Institutions shall have a concussion management plan on file such that a student athlete who exhibits signs, symptoms or behaviors consistent with a concussion shall be removed from practice or competition and evaluated by an athletic health care provider with experience in the evaluation and management of concussions. Student athlete diagnosed with a concussion shall be determined by the team physician or their designee according to the concussions management plan. In additions student athletes must sign a statement in which they accept the responsibility for reporting their injuries and illnesses to the institutional medical staff, including signs and symptoms of concussions. During the review and signing process student athletes should be presented with educational material on concussions. (Runkle, 2010, p. 1)

The NCAA policy clearly indicates that the safety and wellbeing of student athletes are paramount when initiating this memorandum. The importance of interscholastic institutions implementing a structured program is also clear. California State University, Chico, promptly took the advised policy and created a Chico State Athletics Concussion Management Plan, a Chico State Athletic Student Athlete Concussion Statement of Responsibility, and a Chico State Athletics Concussion Home Instruction Sheet. The management plan addresses what a concussion is, how to recognize the signs and symptoms of a concussion, baseline neuropsychological testing, acute management of concussions, post-concussion management procedures, return to play protocol, visiting student athlete concussion procedures, education, and student athlete statement responsibility. The university has created a detailed program for the wellbeing of student athletes in addition to taking a proactive stance on liability issues
which may occur when a student athlete is injured. Management of such an injury can be
difficult, but having pretesting and assessment for post injury at each school is beneficial
to health care providers, student athletes, and parents. This reactive prevention has not
only taken place at the collegiate level but also at the high school level.

Knowledge about prevention programs are primarily in the hands of athletic
trainers and orthopedic surgeons. Administrators, coaches, and student athletes actively
participating in the preventative programs should also be apprised of this knowledge.
“Studies have shown that participating in well-designed preventative training program
significantly decrease the risk of ACL injuries in all athletes, and in females in particular”
(Albaugh, Friedman, Cody, & Ganley, 2010, p. 45). With this being true, it is important
that administrators guide their coaches using successful programs that can boost injury
prevention and the overall success of their teams. ACL injury prevention programs can be
put into action and to help student athletes avoid an injury that takes six months or longer
to heal.

Limitations of the Project

It is extremely difficult to predict the number of athletes that will rupture or
tear their ACL in a certain time frame, so how to study the quality of a prevention
program has its challenges. Addressing ways in which an administrator can prepare
coaching staff to implement injury prevention policies in an effective way is more
obtainable, but time limitations can make things difficult as well. To address these issues
in a proactive manner, I created a survey for administrators of schools and athletic
programs about their ability to implement injury prevention policies in the ways
described in this project. This will not allow administrators to implement the program with their coaching staff as time is limited. However, they will be able to study the proposed program and envision the benefits of its implementation. Additionally, feedback from the administrator about how he/she would implement this program will further its value.

Acronyms/Definitions of Terms

ACL
Anterior Cruciate Ligament, one of the four major ligaments in the knee.

Biomechanical
Adjective based from the noun biomechanics:

1. Medicine/Medical.
   a. The study of the action of external and internal forces on the living body, esp. on the skeletal system.
   b. the development of prostheses.
2. Biology. The study of the mechanical nature of biological processes, as heart action and muscle movement. (“Biomechanical,” n.d.)

Concussion
A brain injury that may be caused by a blow to the head, face, neck or elsewhere on the body with an “impulsive” force transmitted to the head” (California State University, Chico, n.d.).

ImPACT
Immediate Post-concussion Assessment and Cognitive Test.

NCAA
National Collegiate Athletic Association, based out of Indianapolis, Indiana.
NFHS

National Federation State High School Associations, which is the body that writes the rules of competition for most high school sports and activities in the United States.

Proprioception

The body’s ability to transmit a sense of position, analyze that information and react (consciously or unconsciously) to the stimulation with the proper movement (Hougum, 2001).
CHAPTER II

REVIEW OF LITERATURE

Reactive Approach to Concussion Injuries

Head injuries are an emerging issue in athletics from adolescent to professional levels. Concussions are one of the most recent athletic injuries that have been addressed in an urgent way through media outlets, and many institutions are taking action. Schools and sports organizations have had to make adjustments and modifications so repeated occurrences are avoided and further injuries are prevented.

Concussions are a growing problem in sports: they can result from a mild blow, bump, or jolt that may alter the way the brain normally works (Winthrop, 2010). If a concussion is not managed correctly, the consequences may be much more severe. Student athletes at all levels are susceptible to this injury, but adolescents are at the highest risk (McKoester, 2010). “Often, when athletes get ‘dinged’ during a game or in practice, they shrug it off and go right back into play” (Winthrop, 2010, p. 54). Administrators can raise awareness among coaches, parents, and student athletes; this may help in the recommendation of safety first rather than parents urging their child to play through any symptoms. Proper dissemination of information to everyone involved in school athletics can create a safer environment for student athletes.

“About 75% of traumatic brain injuries (TBIs) that occur each year are concussions or other forms of mild traumatic brain injury, according to the Center for
Disease Control” (Winthrop, 2010, p. 54). Health care providers might not be in attendance at all practices and competitions; that is why it is imperative that coaches, officials, parents, players, and administrators know the signs and symptoms of a suspected concussion so they can respond in the appropriate manner.

Policies and laws vary from school to school and state to state. In the state of Washington, there is law known as the Lystedt Law, which is named after Zachery Lystedt. Zachery was a 13-year-old boy who sustained permanent brain damage after reentering a high school football game after receiving a hard hit earlier in the game. This law requires that coaches and parents be educated to recognize the signs of concussion and that any athlete suspected of sustaining a concussion be removed from the athletic activity (Schwarz, 2010). The intention of this law is to make sure an athlete who has concussion-type symptoms does not continue to participate in an activity or sport that could potentially cause more damage than what has already been done. According to the law, there must be written authorization from a “licensed health care provider” trained in the evaluation and management of concussions before an athlete can return to competition or participation in the sport (Schwarz, 2010). Within the Lystedt Law there is no requirement for the presence of certified medical or health care providers because this can be a financial challenge for many sports at youth, high school, and college levels. According to the National Trainer’s Association, only 34 percent of Washington high schools, and 42 percent nationwide, have access to a certified trainer educated with proper concussion care (Schwarz, 2010). The difficulty of having a health care provider present during practices and competitions is relevant for all ages and athletics across the country.
In August 2010, the National Collegiate Athletic Association (NCAA) had a meeting that resulted in a memorandum of protocol stating that all interscholastic athletics should have a concussion management plan. This memorandum consisted of five core standards: student athletes are educated annually about the signs and symptoms of concussions, they have signed proof that they were educated about this topic, they are responsible to inform the health care provider that a concussion related injury has occurred, the health care provider determines when they are ready to play, and student athletes’ health records are on file (Runkle, 2010). A student athlete who displays signs or symptoms of concussion must be dismissed from all athletic activities and be evaluated by a health care provider having experience with concussion evaluation and management (Runkle, 2010). This policy also states that student athletes shall not return to an athletic participation for the remainder of the calendar day including practice, competition, or conditioning sessions. Finally, the requirements include a written medical clearance by a team physician or physician’s designee for a student athlete who has been diagnosed with a concussion (Runkle, 2010). This condition helps to avoid putting a student athlete in jeopardy by not allowing him/her to participate too quickly after the initial injury.

In St. Paul, Minnesota, Rachel Winthrop is a physical therapist assistant (PTA) and a concussion clinic liaison. Her job is to educate parents, athletes, and coaches about the dangers and potential long-term effects of concussions. Winthrop (2010) states that symptoms of a concussion may consist of nausea, balance problems or dizziness, double or fuzzy vision, sensitivity to light or noise, headache, feeling sluggish, feeling foggy or groggy, difficulty with concentration or memory, confusion and/or changes in
behavior or personality. Although most student athletes do not want to miss competition due to an injury, being proactive in the education of coaches and parents helps communicate the concern that if athletes are not fully recovered from an initial concussion, they are significantly more vulnerable to recurrent, cumulative, and even catastrophic consequences if a second injury occurs (Winthrop, 2010).

With an incident such as concussion, baseline or initial testing can be very helpful especially if an injury occurs later. One example of a baseline test that is used with some high school, college, and professional athletes is a program called ImPact, which stands for Immediate Post Concussion Assessment and Cognitive Testing. This test is administered individually or to a group of athletes prior to their athletic season. It is compilation of seven computerized tests, evaluating multiple cognitive functions such as attention span, reaction time, visual and verbal memory, working memory, response variability sustained and selective attention, and non-verbal problem solving (Winthrop, 2010). This information is stored in a database and if a concussion-type injury occurs to an athlete, then a posttest will be given to see the significance or change in cognitive results. There are many tests available to schools. It is incumbent on health care providers and the school/programs administrators to decide which testing is best to help staff conduct long-term evaluation that may be necessary.

Anterior Cruciate Ligament Injuries

“Over 100,000 ACL injuries occur in the U.S. every year, with the highest incidence among individuals between the ages of 15 and 25” (Albaugh et al., 2010, p. 48). This number can be staggering to current student athletes and parents but may also
help them to be more receptive to different methods of preventing these types of injuries. Although injuries cannot be completely eliminated, administrators and coaches need to know that injury prevention, treatment protocols, and rehabilitation strategies for ACL injuries are more important than ever (Albaugh et al., 2010).

“Female participation in competitive sports has grown significantly since the passage of Title IX, a federal law that mandated equal opportunity for female participation in school related athletics in 1972” (Sigward & Powers, 2006 p. 740). Since Title IX of the Educational Amendments came into effect in 1972, more than 2.36 million girls have participated in high school sports, compared to 300,000 in 1972 (Griffin et al., 2006). With increased opportunities for females to participate in athletics, there is also an influx of female injuries occurring too. Competitive athletes involved in contact or collision sports such as basketball, football, lacrosse, volleyball, and soccer are at high risk of injuring the ACL (Shelbourne, Gray, & Haro, 2009). Tearing or a rupture of the ACL is a detrimental injury that requires an extended recovery time ranging from surgery and to the physical rehabilitation process. “Studies comparing ACL injury rates between male and female athletes participating in the same sport have shown a 3-9 times greater incidence in females” (Sigward and Powers, 2006, p. 741). Females are more prone to ACL injury than their male counterparts, presumable because of anatomical, hormonal, and neuromuscular differences (Yoo et al., 2009). Although anatomical and hormonal circumstances cannot naturally be changed, the neuromuscular component may have room for improvement through proper proprioception exercises from a prevention program.
Knee and ACL Structure

The knee contains four major ligaments: the anterior cruciate ligament (ACL), posterior cruciate ligament (PCL), medial collateral ligament (MCL), and the lateral collateral ligament (LCL). Each is significant in helping the knee function properly. The ACL is located in the center of the knee and controls rotation of the tibia (shin bone) on the femur and forward, or anterior, movement of the tibia. The PCL is also located in the center of the knee but is just behind the ACL and has power over the backward, or posterior, movement of the tibia. The MCL is a ligament that gives stability to the inner aspect of the knee and the LCL is the ligament that gives stability to the outer aspect of the knee. The ACL is one of the most commonly injured ligaments in the knee.

Ligaments are elastic-type bands of tissue that connect bones to each other while providing stability to a joint (Yoo et al., 2009). The ACL is the connecting element of the tibia to the femur, or thigh bone.

ACL injuries can happen in many different ways. Today, ruptures of the ACL in younger athletes occur frequently in both recreational and organized sports, in contact and non-contact situations (Albaugh et al., 2010). Normally, the injury results from an overstretching of the ligaments within the knee. ACL injuries are common in all athletes, but female athletes are four to six times more prone to these injuries than their male counterparts at similar levels of exertion (Boden, Griffin, & Garrett, 2000).

Some biomechanical risk factors are “differences in ligament laxity, hormonal influences, muscle firing patterns, landing strategies, and proprioceptive characteristics all play a role” (Albaugh et al., 2010, p. 44). An ACL tear can be caused by an incident involving contact with another athlete, but it more commonly occurs through a non-
contact movement. A variety of factors can contribute to the susceptibility of this particular injury, but no single aspect is the reason for the disproportion between genders. “Most studies put females’ ACL injury risk somewhere in the range of four to eight times that of males participating in the same or comparable activities” (Albaugh et al., 2010, p. 43). A few examples of these occurrences may be improper pivoting, jumping and landing, abrupt stops, or twisting motions of the knee.

A few gender-specific anatomical factors contribute to biomechanical alignment differences. Females are more likely to exhibit genu valgum (a “knock-kneed” position), tibial torsion, and forefoot overpronation. Neuromuscular factors in muscle activation, joint proprioception, and strength often differ along gender lines as well. (Albaugh et al., 2010, p. 44)

Injury and Rehabilitation

This injury is commonly classified as a complete or partial tear and further swelling may cause the knee to lose its natural range of motion. The injured individual will then have a general lack of stability and be in a great amount of pain.

After the injury occurs, the athlete will need surgery in order to reconstruct the torn or ruptured ACL. Each year in the United State there are approximately 250,000 ACL injuries, or 1 in 3,000 in the general population (Hewett, Lindenfeld, Riccobene, & Noyes, 1998). ACL injuries lead to long absences from sports and are one of the main causes of permanent sports disabilities (Caraffa, Cerolli, Projetti, Aisa, & Rizzo, 1996).

There are many options when it comes to the reconstruction of a torn ACL. The three most common types of procedures used are the patellar tendon graft procedure, the hamstring graft procedure, and the allograft procedure. Patellar tendon autograft reconstruction removes the central one-third of the patellar tendon along with two bits or
bone, which is why it is referred to as the bone-tendon-bone graft; it is passed into the position of the original ACL by drilling it into the tibia and femur bone where the original ACL passed through ("What is the ACL," n.d.). The hamstring graft is where the surgeon takes a portion of the patient’s hamstring and screws it into where the functioning ACL had been. The third option is the allograft procedure where doctors use tissue from a cadaver or deceased person ("What is the ACL," n.d.). The portion taken from the cadaver would be a patellar tendon, hamstring tendon, or Achilles tendon.

There are advantages and disadvantages to all three types of reconstruction procedures. That has why athletes need to understand what they personally want, or trust their doctor’s decision as to what is in their best interest.

Post-operative strength testing is beneficial for athletes of all ages, but it may be especially helpful for younger athletes, as it allows patients to see their progress as a process that’s hastening their return to athletics. This is important, because the return to play timeline for pre-adolescents is typically at least three months slower than for older adolescents. (Albaugh et al., 2010, pp. 48-49)

Another postoperative decision is whether an athlete wears a brace after ACL reconstruction. Generally, the decision to wear a brace is made by a physician based on different factors (Albaugh et al., 2010, p. 49). But the effectiveness of a brace is still debated, and the literature about it remains controversial. Most often, orthopedic physicians offer a functional brace for student athletes who defer or delay reconstruction of the ACL (Albaugh et al., 2010, p. 49). “Consideration is also given to athlete’s response to rehabilitation, the intensity and physical demands of their desired activity level, and their psychological response to the injury and rehab” (Albaugh et al., 2010, p. 49). Dealing with injuries can be life-changing events to student athletes, especially those aspiring to be collegiate athletes. Prospective universities pursuing a particular athlete can
consider an injury-free student athlete instead, thus drastically changing the future for those students.

Currently, information about ACL injuries, prevention, and rehabilitation is primarily in the hands of athletic trainers, orthopedic doctors, and other professionals within the medical field. While it is beneficial that there is a plethora of knowledge about this topic, it would be more constructive and proactive if the coaches working with student athletes were trained in a program concentrating on the prevention of such a detrimental injury. The average cost per ACL injury is approximately $17,000 (Hewett, et al., 1999), and surgical rehabilitative costs total approximately $646,000,000 annually in the United States (Myer, Ford, & Hewett, 2004).

After an ACL injury, returning to sports may be permitted as early as 4 to 6 months postoperatively. Athletes typically receive clearance to return to sports after ACL reconstruction surgery 6 to 12 months postoperatively (Kvist, 2004). The rehabilitation process has many variables that depend upon the time frame of recovery and returning to participation. The following time frame was for athletes who had participated in Australian football, basketball, netball, or soccer at a competitive level before their ACL injury (Ardern, Webster, Taylor, & Feller, 2010):

Return to full participation in competitive sport was usually permitted at 9 months postoperatively. The criteria for returning to sport were completion of full postoperative rehabilitation program, full knee range of motion, a stable knee, functional quadriceps control, and no effusion. Most patients were cleared to return to full participation in competitive sport at 9 month postoperatively, and all participants included in this study had received clearance from the orthopedic surgeon to return to sport postoperatively. (Ardern et al., 2010, p. 539)
For student athletes at amateur or unpaid levels, returning to play is likely related to physical ability to perform or play their sport after surgical reconstruction (Shah, Andrews, Fleisig, McMichael, & Lemak, 2010).

At the professional level returning to the same level of competition appears to be heavily influenced by a multitude of nonclinical factors. These factors consist of financial and contract considerations, marketing implications, and the presence of other highly skilled and able bodied athletes who can compete for positions vacated by injured athletes. (Shah et al., 2010, p. 2237)

As shown, the process of overcoming an injury is time consuming and can be daunting, especially if the athlete fears losing the ability to participate in sports.

**Prevention Programs**

Taking the steps to avoid ACL injury is imperative. Prevention programs consist of multiple exercises, but many include plyometrics, strengthening, balancing, endurance, and stability (Yoo et al., 2009). The number of prevention programs that are available, the variety of sports, practice and competition schedules are all important considerations for student athletes when deciding to participate in a program.

Student athletes could potentially lose an entire season of sports participation with an ACL injury and possible scholarship funding (Myer et al., 2004). For high school student athletes aspiring to be collegiate student athletes, circumstances can change dramatically when an injury such as an ACL tear or rupture happens.

As mentioned earlier, anatomical and hormonal circumstances may be more difficult to change compared to the neuromuscular component to the knee. A few of the possible neuromuscular imbalances that women may demonstrate include ligament
dominance, quadriceps dominance, and leg dominance (Myer et al., 2004). Each of these imbalances has characteristics that jeopardize the stability of the knee.

Ligament dominance occurs during a movement that allows the knee ligaments, rather than the lower extremity musculature, to collapse inward to absorb a significant portion of the ground (Hewett, Paterno, & Myer, 2002). An increased medial knee motion, also known as a high valgus knee motion, is an example of when ligament dominance is evidence (Myer et al., 2004). The lack of muscle control with ligament dominance can be detrimental to a student athlete along with other ligament imbalances.

“Athletes who demonstrate quadriceps dominance may increase their risk for ACL injury when they cut and land with low knee-flexion angles” (Myer et al., 2004, p. 353).

Typically, during single-leg landing, pivoting, or deceleration, all common ACL injury mechanisms, the female athlete allows the ground reaction force to control the lower extremity joints direction of motion (Myer et al., 2004).

Quadriceps dominance can involve landing with a straighter leg or less knee flexion, increased quadriceps activation, and decreased hamstring activation (Myer et al., 2004). The likelihood of this happening increases when a student athlete becomes tired.

“Athletes who demonstrate quadriceps dominance may increase their risk for ACL injury when they cut and land with low knee-flexion angles” (Myer et al., 2004, p. 354).

Leg dominance is the third imbalance that can cause a student athlete to be more susceptible to ACL injuries. “Leg dominance is the imbalance between muscular strength and joint kinematics in contralateral lower extremity measures” (Myer et al., 2004, p. 354). Side-to-side imbalances may increase risk for both limbs and place greater stress on the knee; that is why proper balance to effectively absorb high forces is
important (Myer et al., 2004). Training the knee to properly absorb a high force from landing, cutting, pivoting, or other common athletic movements plays a large part in the safety of a student athlete.

Roles of Athletic Administrator

When getting extraordinary things done in organizations, leaders engage in five practices of exemplary leadership, these are, model the way, inspire a shared vision, challenge the process, enable others to act, encourage the heart. (Kouzes & Posner, 2007, p. 14)

The safety and wellbeing of a student athlete, as well as the student’s athletic eligibility, is important. Athletic eligibility consists of regulations regarding academic achievement partnered with those guiding appropriate behavior inside and outside of school and athletics. A joint statement by the National Federation of State High School Athletic Associations and the American Medical Association’s Committee on the Medical Aspect of Sports affirms the right of the athlete to optimal protection against injury to the extent that this can be assured through proper conditioning, careful coaching, good officiating, proper equipment and facilities, and adequate medical care (Jensen, 1988). Jensen stated how periodic evaluation of each of these five major categories could be beneficial to providing student athletes with a safe and healthy experience. Jensen’s criteria are as follows:

1. Proper Conditioning. This helps prevent injuries by hardening the body and increasing resistance to fatigue. Coaches and athletic administers should:
   - Give prospective players directions to follow and activities to perform for preseason conditioning.
   - See that there is a minimum of three weeks of practice before the first game or contest.
   - Take precautions to prevent heat exhaustion and heat stroke. This is particularly important in preseason practice for football, soccer, cross-country and field hockey.
• Require players to warm up and stretch thoroughly before participating in rigorous activity.
• Make substitutions without hesitation when players show signs of disability, injury, or fatigue.

2. Careful Coaching. Athletes who are well coached are more skilled, which reduces other chance of injury. Coaches and other athletic department personnel should:
• Stress safety in performance techniques and elements of play.
• Analyze injuries to determine their cause and suggest ways to prevent them.
• Discourage the use of tactics and techniques that increase hazards on the field of play.
• Plan practice sessions carefully and see that they are neither too long nor too short.

3. Good Officiating. Qualified officials who know exactly what they are doing promote enjoyment of the game and protection for players. In this respect:
• Players and coaches should be thoroughly schooled in the rules of the game.
• Rules and regulations should be strictly enforced in practice sessions as well as in games. If they are not, the risk of injury will increase in practice and players will get into bad habits which will carry over into games.
• Officials should be qualified both emotionally and technically for their responsibilities on the field of court.
• Players and coaches should respect the decision and ruling of officials. If they don’t, tempers will flare and the game may get out of control.

4. Proper Equipment and Facilities. Student athletes should not be expected to participate in athletic programs unless they are protected by safe equipment and play on safe fields and courts. Specifically, schools should see that:
• The best protective equipment is provided for contact sports.
• Careful attention is given to the proper fitting and adjustment of equipment.
• Equipment is properly maintained; worn and outmoded item should be discarded. The temptation to try to make equipment last one more year should be resisted when the safety of student athletes is at stake.
• Proper and safe areas of play should be provided and these areas should be carefully and continuously maintained.

5. Adequate Medical Care. Proper medical care is a necessity in the prevention and control of injuries. Athletic educators and school administrators should:
• See that a thorough preseason medical examination is provided for each athlete and that a detailed health history is taken.
• Arrange to have a physician present at games, and see that a doctor is available during practice sessions.
• Adopt a policy to the effect that the physical will make all decisions as to when an athlete should resume participation following an injury. This applies to both competition and practice.
• Adopt policies on exactly how much medical attention a trainer can perform without a doctor present. (Jensen, 1988, pp. 277-279)
These criteria are recommendations and guidelines to improve a student athlete’s experience. Not all of the suggestions may be possible due to personnel, financial situations, and other varying circumstances from school to school. “In some ways, leaders live their lives backward. They see pictures in their mind’s eye of what the result will look like even before they’ve started their project….” (Kouzes & Posner, 2007, p. 17). Having an idea of what the bigger picture is will help create goals and a mission to ensure a school’s success.

Jensen described 12 different duties of an athletic administrator as:

1) Scheduling and contracting contests.
2) Arranging for officials in accordance with the correct procedures.
3) Establishing travel schedule and enforcing travel policy.
4) Monitoring athletic eligibility.
5) Making certain that program is conducted in full compliance with the rules.
6) Preparing for athletic contests and providing administrative supervision for them.
7) Providing adequate athletic training and medical services.
8) Preparing and administering the budget.
9) Properly reporting accidents.
10) Providing leadership to an effective public relations effort.
11) Supervising coaches in their various responsibilities.
12) Evaluating the coaches and trying to help them improve their procedures and effectiveness. (1988, p. 250)

Numbers seven and twelve suggest that implementing an athletic prevention program would be beneficial to coaches and student athletes. Directing coaching staff to guide their student athletes through a proactive injury prevention program provides adequate athletic training. Educating coaches regarding the injury prevention program and procedures would be essential when fulfilling administrative duties. After initiating a prevention program with coaching staff, an administrator can then evaluate it. The purpose of curriculum evaluations is to determine how well the curriculum contributes to stated goals, and especially how it can be modified and improved (Jensen, 1988, p. 326).
An effective administrator successfully combines a myriad of management skills.

In order to be successful, leaders will have to master eight basic competencies: the management of attention, the management of meaning, the management of trust, and the management of self, as well as the management of paradox, the management of effectiveness, the management of the follow-up, and the management of responsibility. (Sergiovanni, 2005, p. 142)

Sergiovanni addresses each of these eight competencies in detail, which clarifies levels of staff engagement and responsibilities to effectively implement an injury prevention policy. Management of attention is the ability to focus others on values, ideas, and goals, while management of meaning addresses the ability to connect to teachers, coaches, parents, and students athletes so they find their lives useful, sensible, and valued. Management of trust is accomplished by showing that the administrator is credible, legitimate, and honest. The management of paradox pertains to the ability to bring together ideas that may not seem to work together, along with managing the effectiveness by how programs are run while getting results. Management of follow-up should be orchestrated by someone who is involved with it on a daily basis and is participating in professional development and responsibility by having coaches and staff carry out commitments, promises, obligations, validated research, and other ideas (Sergiovanni, 2005).

Supervision and Leadership

A principal supervises teachers, an athletic administrator supervises coaches. In both circumstances, the success of the student or student athlete is the goal. With a direct informational approach, the supervisor may it be a principal or athletic
administrator, is constantly framing direction and choices for teachers or coaches

(Glickman, Gordon, & Ross-Gordon, 2010/1985). In a sequence approach, the

instructional leadership behaviors are shown on the left and in this case, how an academic

supervisor would implement them on the right:

- Presenting – Identify the problem.
- Clarifying – Asking the teacher for input into the problem.
- Listening – Understanding the teacher’s perception of the problem.
- Problem solving – Mentally determining possible solutions, discuss.
- Directing – Stating alternatives for the teacher to consider.
- Listening – Asking the teacher for input on the alternatives.
- Directing – Framing the final choices.
- Clarifying – Asking the teacher to choose.
- Standardizing – Stating specific actions to be taken.
- Reinforcing – Summarizing and following up on plan. (Glickman et al., 2010/1985, pp. 149-152)

With the listening approach, the administrator has to collaborate with coaches who may

have expertise on a topic or background knowledge that may be beneficial to implement.

Clarifying the importance of an injury prevention program and the changes required for

implementation need to be identified by the supervisor. “The supervisor is the major

source of information, goal articulation, and suggested practices” (Glickman et al., 2010/1985, p. 156). The supervisor should solicit input from teachers or coaches when discussing the program’s overall implementation so that it is feasible and realistic

(Glickman et al., 2010/1985).
CHAPTER III

METHODOLOGY

As a future administrator, I felt compelled to address this significant topic, an injury I have seen many athletes struggle with and endure. Although I have never personally injured my ACL, I have seen several females and males, teammates, opponents, relatives, as well as student athletes I have coached cope with the frustration and pain of an ACL injury.

One of the first of many experiences in coping with the consequences of ACL injuries was during my senior year of high school. I was one of the two seniors on a female soccer team at Middleton High School in Wisconsin. Unfortunately, early in the season, the other senior went down to the ground during a game with an ACL injury. Due to this injury, her soccer season and high school soccer career ended much too early. This injury also required reconstructive surgery and a lengthy rehabilitation process.

As my soccer career continued at the college level at the University of Wisconsin, Milwaukee (UWM), ACL injuries seemed to be common. I was a college soccer player for five fall seasons and four spring/off seasons, as well as on my university’s dance team for two years. Within these five years, I had a dozen teammates tear their ACL at one time or another. Each of these women had different stories and experiences of their personal athletic journeys and their encounter with the seemingly unavoidable ACL injury. Some of these female student athletes had torn their ACL in
high school, some in college, and others after finishing their college career while playing in competitive leagues.

Along with these different time frames and age ranges, ranging from 15 years of age to 30 years old, are other variables. One of my college dance teammates tore her ACL at the end of our hip hop dance routine when we were performing in Orlando, Florida, for a the Universal Dance Association National Championship. She completed her final jump in the routine, went to land then pivot quickly, and then suddenly she was on the ground in excruciating pain. At this time, I had been dancing for 17 years, and this was the first dance teammate who had ever suffered a torn ACL. I was also a gymnast for 14 years, and I have no recall of any of my gymnastic teammates tearing their ACLs.

With this said, I had multiple soccer teammate who have torn their ACLs more than once. One teammate said that she tore her right ACL playing high school basketball at the age of 15 through a contact incident where another girl was attempting to steal the ball from her. She had surgery and went through a rehabilitation process that took six months. No more than four days after she was cleared by her health care providers for active participation in all sports, she was pivoting in soccer and with no contact made to her, her left ACL tore. She was only 16 years old and had to cope with yet another round of reconstructive surgery, rehabilitation, and the decision of whether or not to continue her athletic career. In this particular circumstance, this athlete continued to play soccer at UWM and finished her five-year career without another ACL injury.

Every individual who has dealt with an ACL injury has a unique story. Some injuries occur due to contact with another athlete, some are non-contact, and some during practice and some during competition. Yet, no matter how it occurs, the end result is
surgery and an extensive rehabilitation process. As most athletes do not prefer being sidelined from their sport by this healing process, athletes typically receive clearance to return to sport after ACL reconstruction surgery 6 to 12 months postoperatively (Kvist, 2004). A number of athletes are fortunate enough to recover from this process and return with no reoccurring injuries, while others are not as lucky. Of the dozen athletes that I mentioned earlier, only a handful of them displayed an abundance of resilience in the fact that they had torn their ACLs more than once. In my teammates’ cases, none of these women had torn one particular side three times; it was typically two on one side and one on the other side.

Another individual story that resonates in my mind is my dear friend and college roommate for two years. She had torn her ACL during her junior year of high school at the age of 17 participating in a powder puff game, which is where the junior girls play against the senior girls in a flag football game during homecoming week. She explained it was rainy and muddy during that game. She was running straight forward and went to cut quickly when she heard a pop in her left knee. She recovered from that reconstructive surgery and went on to win a state championship in high school soccer a year and half later and then continued her soccer career in college. Our UWM women’s soccer team played a game in Indiana when she went up for a header, was knocked from underneath, and came down awkwardly, hearing a pop in her right knee. At the age of 20, she went in for her second surgery. This is when I was living with her. She had to miss some classes because she could not crutch all the way to class with swelling in the knee, being on pain pills, needing to ice, and rest. She had recovered from that surgery as well as one would think and received clearance from her doctor to play soccer. During her first
game, back on her 21\textsuperscript{st} birthday, she was dribbling with the ball, went to cut and her knee gave out. There was slight pop in her right knee again, and that was the day that her college career as she knew it came to an end. She would still have to go through the surgery and rehabilitation process, but she knew that even though she loved the game of soccer, she wanted to be able to walk when she was older and her body had endured enough. She had submitted to three reconstructions consisting of two patellar tendon surgeries, then a cadaver replacement for her third surgery. During every reconstructive surgery, she also had to have some of her meniscus, which is a pad of cartilage tissue in the knee, removed as well.

A number of these former teammates, despite enduring two or three ACL injuries, surgeries and rehabilitations, chose to continue with their soccer careers. Within the last year, ACL injuries continue to dominate my life. My 32-year-old brother tore his ACL playing indoor soccer in Madison, Wisconsin. Locally CSU, Chico’s intercollegiate athletics has lost three athletes to this tragic injury as well. This group of student athletes includes a senior on the men’s soccer team, a freshman on the women’s soccer team, and a senior on the women’s basketball team. Of this group, the female soccer player is the only one dealing with this surgery and rehabilitation process for the second time.

The majority of the ACL injury occurrences I have discussed have been suffered by female student athletes, which supports the research showing that it is a female dominant injury. “Studies comparing ACL injury rates between male and female athletes participating in the same sport have shown a 3-9 times greater incidence in females” (Sigward and Powers, 2006, p. 741). With a passion for athletics and female participation, it is imperative to develop ways to help protect female athletes, especially if
they are more susceptible to a particular injury. Female participation in competitive sports has grown significantly since the passage of Title IX, a federal law that mandated equal opportunity for female participation in school related athletics in 1972” (Sigward & Powers, 2006, p. 740). More participation means a female has a greater chance of getting injured just like any other active student athlete.

The purpose of this study was to create an ACL Injury Prevention Program that could be accessible to high school and club soccer coaches of female soccer teams. I had this particular age group and gender in mind because of the literature I have read, “Over 100,000 ACL injuries occur in the U.S. every year, with the highest incidence among individuals between the ages of 15 and 25” (Albaugh et al., 2010, p. 48). Ideally, the program would help females acquire proper muscle memory in the neuromuscular movements that can commonly result in an ACL injury.

The program could be easily implemented into their daily regimen of training, and it was also geared towards female soccer players as the research indicates that basketball and soccer are among the leading sports for ACL injuries (Micheli, Metzl, Canzio, & Zurakowski, 1999).

When pursuing the program further, some of the questions I felt obligated to consider were:

1) Are there many ACL injury prevention programs already out there? If so, do I feel they are effective?
2) Do I want to make it gender or sport specific?
3) What happens if an administrator implements an ACL prevention program for female athletes only, then a male tears his ACL? Could it be just as effective being gender neutral?

4) Is my vision of a prevention program easy for a coach to integrate?

5) As an administrator, how would I implement a prevention program with my coaching staff so that their student athletes could benefit from the program?

In addition to addressing a significant problem facing student athletes, this project focuses on developing a managerial approach so an administrator can implement a program that is proactively beneficial to all student athletes at the high school level. There are many facets to athletic administration, so addressing these multiple aspects of being a leader was critical in the design of the program.

**Design of Investigation**

I began my investigation reading articles about why the Anterior Cruciate Ligament (ACL) is a common ligament that is easily torn. I read about the structure of the knee, the difference between females and males when it comes to this particular injury, and about contact and non-contact movements that can cause this injury to occur. There are multiple opinions and studies that explain different opinions about the topic, but my goal was to learn more about the problem, and see if there was a way that I, as a school administrator, could help prevent some student athletes from experiencing this detrimental injury.

The ACL tear is an injury that may be more known to those individuals involved in the athletic world because it has not yet received the same amount of media
and public attention concussions have received over the years. Because of the coverage concussion injuries have received, laws now mandate colleges and high schools take steps to deal with a dangerous injury involving the head and brain. As a model for my own project, I examined the California State University, Chico’s management plan that addresses what a concussion is, how to recognize a possible concussion, signs/symptoms baseline neuropsychological testing, acute management of concussion, post concussion management procedures, return to play protocol, visiting student athlete concussion procedures, education, and student athlete statement of responsibility.

There has been national attention on concussions, an injury that has been occurring for years and at all levels of athletics. After learning more about how CSU, Chico, implemented a concussion prevention policy, I studied the ways an athletic administrator could approach their coaching staff with this program. Debra Runkle, chair of the NCAA Committee on Competitive Safeguards and Medical Aspects of Sports (CSMAS), states that concussion management plans must address prevention, identification, evaluations, and the management of concussions (Runkle, 2010). Her Concussion Management Plan makes it very clear that student athletes exhibiting signs, symptoms or behaviors consistent with a concussion shall be removed from practice or competition. They will then be evaluated by an athletic health care provider with experience in the evaluation and management of concussions, and they cannot return to active participation until they have been cleared by a health care provider (Runkle, 2010). Coaches in compliance with the concussion management plan need to know the specific process and procedures of the school’s protocols too.
Throughout the Masters program at CSU, Chico, I have learned numerous aspects of educational leadership and administration that are applicable to either being a principal or athletic administrator. Several of the concepts in the classes I have taken have taught me communication skills as an administrator, school leadership, law and education, and curriculum development. Through these key topics as well as many others, I feel I have the capability to implement a program that would be beneficial to the student athletes I have participating in my school’s athletic program.

After obtaining a sufficient amount of knowledge about ACL injuries and prevention programs, I created a version of an ACL Injury Prevention Program that could be applicable to all high school athletic sports, and that could be easily managed by coaches who are familiar with ACL injuries as well as coaches who are not. I enlisted the assistance of the head athletic trainer at CSU, Chico, for his input and opinions as to what the ACL Injury Prevention Program should entail due to his expertise and experience in dealing with numerous injured athletes over the years. He has been a certified athletic trainer for 26 years, rehabilitating many types of injuries, including many ACL tears and rehabilitations after surgery. He assisted a well-known athlete, Steve Kerr, who endured and recovered from a season ending injury in college basketball at the University of Arizona in 1986-87. When Steve Kerr finished his rehabilitation process with the athletic trainers at University of Arizona, he was able to return to basketball the next season and have a successful career in the National Basketball Association (NBA).

The University of Arizona Wildcats had arguably their greatest season ever. They finished 35-3 and advanced to the school's first Final Four. The injury never seemed to bother Kerr again. He played on two Spurs Championship teams and three straight Bulls titles from 1996-98. His shot with five seconds remaining won the title for the Bulls in '97. (Rubenstein, 2010, p. 3)
During the conversation, we reflected on a resource he shared with me. The title is “Rationale and Clinical Techniques for Anterior Cruciate Ligament Injury Prevention Among Female Athletes” (Myer et al., 2004). We examined the multiple exercises presented throughout the article and discussed what exercises would optimize the injury prevention program.

Subsequently, six exercises were chosen that were deemed beneficial to student athletes regardless of gender and sport. Exercises were selected that a coach or administrator could utilize that would enhance a student athlete’s performance as well as help prevent him/her from dealing with a devastating injury. If implemented appropriately and the exercises are preformed correctly, it is hoped these exercises will help athletes develop accurate form during jumping, landing, pivoting, and planting movements. The student athlete may also experience increased hamstring strength, which will help minimize ACL injury potential.

After reviewing the exercises chosen for the program, I asked two female college soccer players that play for me at CSU, Chico, if they would be willing to volunteer and actively participate in the creation of an ACL Injury Prevention Program that could be implemented with high school student athletes. They agreed and they were my models for the pictures used in the prevention program. With the program finalized with a brief background section and descriptions under each picture of what the athlete is to do, a survey was created to be attached with the ACL Injury Prevention Program to get informative feedback from the athletic administrators it was sent to.

I contacted 14 individuals who had been, or currently are in an athletic administrator position. A couple of these individuals are located here in Chico,
California, while the majority of administrators are located across the country in the Milwaukee and Madison metropolitan areas of Wisconsin. The reason I specifically chose these individuals was because of their current or former positions as an athletic administrator at the high school level. Within this particular administrative position, I know they have experience interacting with high school student athletes on a daily basis. These are individuals whom I either know from prior personal experience, or from the feedback of others stating that they hold their student athlete’s health and wellbeing in high regard. I was able to get quality responses from four individuals that did a thorough job in examining the program and responding to each survey question. The ACL Injury Prevention Program follow-up survey that I developed is attached (see Appendix B).

The survey asked questions regarding the likelihood that they, as current administrators, would implement the ACL Injury Prevention Program at their school with their coaching staff and athletic programs. There were also questions asking about changes they felt would be useful to the program. The focus of the survey was this: I wanted to acquire information that would help create a step-by-step implementation process and make sure this curriculum can be realistically implemented in a high school’s athletic program. Core areas related to this central focus were: the level of concern respondents had about student athletes’ injuries, whether respondents deal with injuries on a regular basis, and if they could be potentially prevented. Other questions I asked these former and present athletic administrators about whether schools where they were currently (or had been) employed have any injury prevention programs, if they feel they could implement the ACL Injury Prevention Program as presented to them, and what challenges they foresee carrying out this type of program. I presented the questions in an
open-ended format that allowed these individuals an opportunity to explain and expand on any of their answers, discuss how they would implement this program as an athletic administrator, and have a chance to discuss any questions or concerns they had about this particular program. The feedback and responses I received were all through e-mail communication. Many of those who did not respond commented that they were too busy and would reply at a later date; unfortunately, it passed the deadline for the completion of this project.

With the feedback I gained from the survey results, I created a specific process by which an athletic administrator could carry out the ACL Injury Prevention Program within their high school programs. The process begins by discussing the literature from Sergiovanni (2009/1987), addressing the importance of having the same mindset among staff, and in this particular situation, the principles and goals shared among administration, coaches, parents, and student athletes involved with high school athletics.
CHAPTER IV

RESULTS

The purpose of the ACL Prevention Program Survey was to solicit input regarding the creation and implementation of an injury prevention program for the benefit of high school student athletes. Learning how an athletic administrator would utilize this program helped develop the implementation process for it. I used the survey responses from the athletic administrators, literature on leadership and administration, along with personal experience to develop a process to allow universal implementation of the ACL Injury Prevention Program developed for most high school athletic programs nationwide.

I will discuss some of the responses to questions within the survey, highlighting those that were most pertinent and informative to this project. It is important to recognize that the responses I received on these surveys were from current and former high school athletic administrators (AD), so these individuals have recently or are currently interacting with student athletes and coaches on a daily basis. The survey was sent to 14 individuals, and I received four responses in return.

The first survey question asked, “To what extent, as an administrator or athletic administrator (AD), are you concerned about injuries?” Out of the scale of 1 to 10, with 1 being “not at all” and 10 being “very much,” those surveyed were asked to rate their level of concern. Of the respondents, 100% rated it above an eight, a rating that suggests that these administrators are very concerned about the impact of student injuries.
One AD stated that, “Anything that can be proactive to benefit an athlete and keeping them injury free is a benefit to parents, coaches, teams and especially the athlete. The key to sports is participation and enjoyment, and sometimes injuries are the ones that will be remembered rather than the positives.” Of the respondents, two specifically stated that they wanted student athletes to be in a safe arena, whether at practice or in games. It was very encouraging that the athletic administrators who did respond displayed a clear concern for the health of the student athletes participating in sports at their school. A safe environment is crucial in minimizing injuries in student athletes along with the proper training.

The second survey question asked, “How are you, as an administrator, impacted by potential preventable injuries?” One athletic administrator acknowledged that, “more contributors without season ending injuries make for better teams overall.” Another athletic administrator stated that, “while a school district overall may not be impacted, the school community, parents, coaches, and athletes would feel more assured to be participating in a program where they are preventing potential injuries.” As an assistant coach for CSU, Chico, I deal with student athletes at the college level. I have also seen athletes deal with ACL season ending injuries, one being this past fall, and she is currently in the rehabilitation process.

The third survey question inquired, “What are the benefits of this type of injury prevention program?” Although the answers were very different, the general themes were very similar. Some of the various responses consisted of something as simple as prevention equals less time out of play. Other respondents explained that more individuals with awareness to potential injuries and creating muscle memory were likely
to want to participate in a prevention program. This comment showed that the athletic administrator was making the correlation between quality of movement and correct muscle memory that would enhance athlete stability. Another athletic administrator stated that an injury prevention program promotes the safety of an individual, a healthier team, and a more vibrant program. As a former athlete and current coach, I agree with all of these answers.

The fourth survey question asked, “What liability factors do you (AD) think would be associated with this program?” There were many valuable comments made in response to this question. One AD mentioned that off-season liability with training in a non-school sponsored activity would be a concern should an injury occur. Another AD stated that a trained or certified instructor, athletic trainer or physical therapist should be the one to conduct the exercises with the coaches and student athletes to alleviate liability. Still another AD brought up the point that unless someone was instructing the athletes incorrectly, they couldn’t see any problem that would open the district to liability, except perhaps the cost of the program itself. This issue is a pertinent one for administrators and may vary in each state. Each site would be wise to consider this possibly costly factor.

All of the survey respondents brought up important factors to consider as a school administrator. These statements indicated that it is important to create a safe environment not only for the student athletes, but also for the administrator and the district from a legal standpoint. The program needs to be detailed and complete, taking into consideration areas such as liability and off-campus instruction. Off-campus instruction would be a student athlete pursuing the program on his/her own during the
summer, with the athlete having full knowledge that the school is not liable if an injury occurs. One administrator could not see this program being effective in the off season or outside of the school year unless student athletes chose to do it on their own. He suggested that it would be ideal to have a certified professional teach and instruct coaches on how to guide the student athletes through the prevention program exercises so that the coaches feel safe and confident in leading their team in this proactive injury prevention program.

I agree. As an administrator, when informing coaches, parents, and student athletes about the ACL Injury Prevention Program, I recommend the use of a health care professional to provide the information so that, when specific questions are asked, they will have concrete answers about the specific topic.

The fifth survey question asked if insurance policies would change at the school due to an injury prevention program, and if so, how? Three of the respondents replied no, while stating students must provide their own insurance regardless. Although one individual explained that if the ACL injury continued to occur or increased in frequency, then potentially there could be a cost issue or perhaps even a liability issue. I do not completely understand this response because of what I know. At the high school athletics level, parents and student athletes sign waivers that, if an injury occurs, their current health insurance will cover it and the school is not liable. That is why the consent form needs to be signed before a student athlete actively participates in any athletic program.

The sixth survey question was, “As a school administrator, would you use this prevention program?” If yes, what specific implementation steps would be taken with
coaches? The responses to this question were broad and informative, generating many ideas regarding program implementation. These ideas were:

1. Training for all coaches in each specific sport.
2. Education: classroom and onsite demonstration, followed with question and answers.
3. One AD was quite specific in his process of carrying out the injury prevention program, beginning with introducing the instructor or program to coaches for a preseason meeting.
4. Having coaches implement the program for the preseason and regular season.
5. Evaluation of the program with the coach during the post season evaluation and making sure to have these exercises for the athletes to use on their own during the off season.

It is important to note that 100% of the athletic administrators stated affirmatively that they would implement a prevention program of this type. I would do exactly what was proposed when implementing this injury prevention program. The steps I have developed are clear regarding a meeting with all coaches before the school year to provide training, then having a preseason meeting before each fall, winter, and spring season to display the ACL injury prevention exercises that are involved in the program.

The seventh survey question inquired as to what challenges an athletic administrator might foresee occurring during the implementation of this type of program. There were a wide range of responses to this question. Some of the challenges mentioned were cost, the supervision of completing the exercises with proper technique, and coach buy-in (some coaches may think what they have is adequate already). These are valid
points. Administrators would have to use a collaborative process to increase staff buy-in if there was some resistance. It would take an administrator and coaching staff that understands the significance of a program that helps minimize the potential for devastating injuries such as an ACL tear.

The eighth survey question inquired, “Do you currently have an injury prevention program? If so, what is it?” All of the responses I received stated that their school did not have any particular injury prevention program. One individual did say that their coaches simply uses stretching and warm-ups, which is a prevention program on a small scale. Hopefully, with the current information about ACL injury being addressed, it might increase these athletic administrators’ awareness of this common injury and cause them to pursue this further. I know after working with high school student athletes that the high occurrence of this injury is scary, in particular for females who have seen their friends cope with this injury. Embedding a program that provides exercises and the reinforcement that they are taking precautionary steps may help in the confidence and ability of these athletes.

The ninth survey question asked for any changes the administrator felt could be made to the program. Again, there were a variety of responses. Some of the suggestions that could be easily implemented were DVD examples, a calendar to fill in the number of repetitions per day or week, and seminars for parents and athletes before each season. Another suggestion was lower repetitions with proper techniques and increase repetitions as the techniques are perfected. All of these suggestions could easily be realized and be effective for various reasons. As an administrator, I would make the calendar or DVD accessible upon request. I believe most coaches would feel comfortable
with the implementation process after they were shown demonstrations by a health care provider or athletic trainer and given an opportunity to ask questions.

The tenth and final survey question asked for any feedback (suggestions, questions, or concerns) about this ACL injury prevention program. Many of the responses did not suggest anything but said ‘thank you’ and that ‘it is a great idea’. One particular athletic administrator wanted to know more about the data regarding which high schools are more prone to injuries, if the sports are contact or noncontact, and what the male to female ratio is. I appreciate this individual’s curiosity, because this is information that could easily be imbedded in the background and beginning of the ACL injury prevention program. The research I have completed in this area can be found in Chapter II and would be of benefit to a proactive athletic administrator.

The overall results from this ACL Injury Prevention Program and survey served a great purpose. I acquired information from multiple perspectives that helped me see different aspects of the implementation of this program from an administrative point of view. The responses suggest that the development of an ACL prevention program, with appropriate adjustments, could definitely play a very important role in the high school athletic environment and potentially help a large number of student athletes. I also find it promising that many of the athletic administrators displayed a genuine concern about the student athletes at their particular school. It underscores their passion to see student athletes and teams succeed, combined with the willingness to guide their coaching staff in the implementation of this proactive injury prevention program. Athletic administrators have a busy job, but the decision to make a priority of something they find important will be beneficial to others.
Having an athletic department become a community of mind on a specific topic can be important for both the coaches as well as the student athletes’ experience during their athletic career. “As connections build, schools become communities by relationship, of place, of mind, and of memory” (Sergiovanni, 2009/1987, p. 208). This does not just hold true in an academic setting, but for any aspect of building a relationship and a consensus for something that is worthwhile. In a leadership role, in order to implement a program, it is important to have your staff share your vision and passion for the direction you want to go. When discussing building a community, nothing is more important than the struggle to create the community of mind that binds members to a shared ideology as it bonds them together in special ways (Sergiovanni, 2009/1987).

When implementing a prevention program, the value of caring for the student athlete’s health and wellbeing is crucial. “Schools, for example cannot become caring communities unless caring is valued and unless a norm system develops that points the way toward caring, rewards caring behaviors, and frowns on non-caring behaviors” (Sergiovanni, 2009/1987, p. 209). As an athletic administrator, the idea of implementing a prevention program should not be a demand; it should include collaborative discussion with the coaches, address the importance of keeping student athletes injury free, and explain why it would be beneficial for the entire school community.

The importance of approach is also crucial as a leader. An informational directive approach by an administrator is important to facilitate and frame the direction and choices for the teacher or coaches (Glickman et al., 2010/1985). Within the sequence approaches, presenting, clarifying, and listening to staff feedback is imperative. I have used Glickman et al.’s (2010/1985) Direct Informational Approach to demonstrate how
an ACL injury prevention program might be implemented. The steps on the left are the approach behaviors and my application of them are on the right:

- Presenting – Identifying the problem – ACL Injury.
- Clarifying – Ask coaches for input about problem.
- Listening – Understanding coach’s perception of problem.
- Problem solving – Discuss the injury prevention program possibility.
- Directing – Stating importance for coaches to implement program.
- Listening – Asking coaches for input.
- Directing – Framing the final choices of how to implement program.
- Clarifying – Asking coaches to choose how often the exercises will be done.
- Standardizing – Stating specific actions to be taken, discuss the programs exercises.
- Reinforcing – Summarizing decisions, and following up on plans.

The presenting, clarifying, listening, problem solving, and directing approaches will help staff to accept and buy into the importance of the injury prevention program. “The supervisor is the major source of information, goal articulation, and suggested practices” (Glickman et al., 2010/1985, p. 156). The supervisor should solicit a teacher’s or coach’s input when discussing the program’s overall implementation so that it is feasible and realistic to the entire staff (Glickman et al., 2010/1985).

Once the staff has listened to the proposal of the idea from the administrator and shared their feedback and thoughts, it is then time for the administrator to educate the
coaches about the topic. Coaches will have knowledge about different topics, but the key is having all of the coaching staff feeling comfortable putting the program into practice.

The Process of Implementation

The process of implementation I created is to advise athletic administrators how to carry out the ACL Injury Prevention Program. Each school district and school has different circumstances and administrators need to be able to make adjustments to fit their particular situation. I have used my experience as a coach and a player as a basis for this process. My background includes coaching high school soccer for a few years while I was a teacher, the knowledge I gained from coaching against other high schools, my overall experiences with high school athletic programs, and the accessibility to the resources they have.

I will present the key points an athletic administrator should address at a mandatory preseason meeting for parents and student athletes who are participating in a sport in that particular season. There are three seasons of athletics so there would be a meeting prior to the fall sports, winter sports, and spring sport. This meeting will include the specific implementation steps of the ACL Injury Prevention Program.

Coaches implementing the program need to be educated about how to instruct athletes. If the athletic administrator does not feel comfortable explaining and teaching the coaches how to be a clinician of this program, he/she should have the school’s athletic trainer or health care provider instruct the coaches on the key concepts to help student athletes succeed. Within this training for coaches, there are many aspects that are important to learn. “Essential components or comprehensive training protocol are
dynamic, biomechanically correct movement skills; neuromuscular imbalance; and constant biomechanical analysis by the instructor with feedback to the athletes both during and after training” (Myer et al., 2004, p. 355). Clinicians, while giving feedback during and after the exercises, also need to be skilled in recognizing the desired technique for the given exercises (Myer et al., 2004). Coaches also need to keep in mind that doing the exercise correctly is the first step; then it is acceptable to increase the quantity or intensity of the exercises as long as the quality is not compromised. Keep in mind, student athletes and parents will get an example of the program at the mandatory preseason athletic meeting.

The implementation plan for this injury prevention program would be addressed with an informational directive approach at the beginning. It would begin with having a meeting of coaches at the beginning of the year, before the fall sports general meeting. This meeting would address the background and topic of the rise in ACL injuries over the years. With the statistics and information about the injury I have gained, I would ask them what they think about the injury itself. I would also ask, if there was an opportunity to prevent their student athletes from suffering the consequences of this injury, would they be willing to implement a very efficient and multipurpose ACL Injury Prevention Program? I would emphasize that this program’s purpose is to help minimize the odds of student athletes getting seriously injured and tearing their ACL and to learn how to make sudden movements using proper techniques. These exercises consist of jumping, hopping, and landing correctly. I would have our athletic trainer or health care provider go into detail about the movements and coaching points while the student athletes do the exercises. I would also ask the participating coaches to watch each other
and practice giving coaching cues and feedback similar to what they would be giving their student athletes on their team. At the end of this meeting, I would ask if there were any questions or concerns for myself, as the athletic administrator, or for the athletic trainer who is teaching the program.

A general preseason meeting would be held three times a year prior to each fall, winter, and spring seasons in which high school sports are held. Student athletes and one of their parents or guardians would need to be present in order for them to participate in the athletics program. This meeting would contain the following steps and information.

General Preseason Meeting

- Step One: Introductions given by the school administrator or athletic administrator, sharing the names of head coaches and assistant coaches for each specific sport, and introducing the athletic trainer for that season.

- Step Two: Discuss the school district’s athletic vision
  - Student athletes’ sports conduct consisting of quality competence, character, civility, and citizenship.
  - State and school policy for eligibility and the athletic codes of conduct.
  - Expectations for student athletes’, parents’, and coaches’ behavior.
  - Specific responsibilities or concerns for both student athletes and parents.

- Step Three: Keys to eligibility
  - Age, academics, and attendance – stating the school standards to be able to participate in sports.
• Alcohol, tobacco, and other drug use violations – with disciplinary actions for 1st offense, 2nd offense, and 3rd offense.

☐ Step Four: Discuss health and injury prevention

• Discuss getting a signed parental consent form before student athletes participate in any practice or competition, which will take place at individual sports meeting after the general meeting is completed.

• Discuss the importance of proper care of student athletes, adequate rest, nutrition, and address injuries when they occur.

• Introduce the increase in ACL injuries and how the athletic program has chosen to implement this prevention program for the safety and wellbeing of its student athletes.

• Have your school’s health care provider or athletic trainer who is directly involved in your school’s athletic programs.

  1. Explain and discuss the prevention program.

  2. Have a student athlete display each of the six specific exercises within the ACL injury prevention program, discussing the importance of proper technique, and the gains that can be made through quality of correct repetition.

  3. Explain that each coach will be accountable for how much each exercise is done. This is due to the fact that each specific sport has an individual practice and competition schedule and the number of repetitions should be adjusted accordingly so student athletes are not fatigued on game days or competition.
4. There can be a brief question and answer about this topic for parents and student athletes, but otherwise the meeting can proceed.

- Step Five: Hand out the Parent Athletic Handbook that is a detailed book of information covering every aspect of athletic participation applying to the state and school district standards.

- Step Six: Close the general meeting and allow parents to go to their sport specific meeting. (This is a great time to do sport specific meetings since parents and student athletes need to be present at the general preseason meeting in order to participate.) The specific coaches can talk to their parents about any specific topics or concerns that need to be addressed before the season begins.

- Step Seven: Coaches distribute and collect immediately:
  - Signed consent forms from parents or guardians allowing their student athlete to participate.
  - Signed consent forms from the student athlete showing that he/she understand the expectations expected in order to be an active participant in their school’s sports.

This step-by-step layout shows how an administrator can execute the program with the coaching staff first and then student athletes and parents at the mandatory preseason meeting. I would use the techniques and skills gained so that my coaching staff takes ownership of the program and feel confident that having their particular student athletes will be beneficial to their sport’s success.
CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

If I were to continue to pursue this topic with an ample amount of time, I would have athletic administrators implement the program with their coaching staff. I would ask the administrators to hold a meeting with coaches to discuss what the processes are, have a demonstrator come in and discuss the exercises if the administrators did not feel comfortable or qualified to demonstrate and discuss the critical points themselves. Then I would have the athletic administrators continue the implementation process with preseason meetings with parents and student athletes. Following this, I would solicit feedback through a coach’s survey targeting the many questions and concerns that would go along with implementing this type of program.

Another area I would suggest more investigation into is the roles of an athletic administrator at the high school level. An ample amount of research discusses the general concept of leadership, being a school supervisor and administrator or a college athletic administrator. There seems to be a lack of literature about the aspect of high school athletic administration. All the topics are relevant in some aspects of supervision, leadership, and administration, but what a college athletic administrator job entails is very different than a college coach, elementary or high school principal, and a high school athletic administrator. With this said, the exploration of how to prepare administrators in
an athletic setting could be beneficial when addressing how to implement a program that is self generated by common injuries rather than a federally or state mandated action.

Throughout this process of research, discussion, collaboration, and feedback, the continued occurrence of ACL injuries in the athletic world continues to interest me. Initially, it started with me thinking about teammates I have played with and against, and also family members who have dealt with the horrific injury of tearing their ACL. My question has evolved into, How can I make an difference with the coaches and student athletes I will work with in the future?

Having been both an educator of students academically, and a coach of student athletes athletically, I feel there is a common motivation that helps inspire my mission. I strive to instill in all my students and student athletes a sense of accomplishment and success. In an academic setting, the embodiment of this is the administrator who can lead and motivate teachers to be successful and who believes that all students can learn. In an athletic environment, this involves guiding coaches to lead their teams and student athletes with a passion for the sport they are coaching and creating an environment where the athletes can be successful on a daily basis.

Unfortunately, there are consequences that occur when a student athlete is injured. Beyond the inability to participate in their sport of choice, some student athletes have to miss school if surgery is required and the recovery process is complex. Also, high school student athletes with the aspirations of pursuing their sport at the college level may have to alter their plans due to their injury. At a higher level, some coaches may not let an athlete who has had such a severe injury play at their school because they may see them as being susceptible to a particular injury or injuries in general. This is why I feel
that an ACL injury prevention program can be thoroughly beneficial to all high school student athletes. We as administrators and coaches may not be able to eliminate all injuries to student athletes. However, we can optimize their health and safety by implementing accessible injury prevention programs and helping train their bodies to use correct basic biomechanics movements.

In the athletic world, statistics are commonly thrown around about how common ACL injuries are and how, “most studies put females’ ACL injury risk somewhere in the range of four to eight times that of males participating in the same or comparable activities” (Albaugh et al., 2010, p. 45). As an athletic administrator, it is part of the job to understand what issues are going on, and, in a leadership role, it is important to take action if a beneficial change can be made.

Within a leadership role in an athletic or academic setting, there are different styles and characteristic of individuals and multiple duties that each job requires. Jensen described 12 different duties of an athletic administrator, addressing their close supervision of athletic programs.

Among the administrator’s 12 responsibilities, Jensen (1988) addressed keys that relate particularly to the ACL Injury Prevention Program that should be implemented in high school athletic programs today. These duties make sure the program is conducted in full compliance with the rules, provides adequate athletic training and medical services, properly reports accidents, provides leadership in an effective public relations effort, and supervises coaches in their various responsibilities (Jensen, 1988). In order to have a successful athletic program, the administrator needs to be organized and diligent
about what needs to get done. Taking the time to implement a program for the safety and wellbeing of student athletes should be a priority for the administrator.

With the feedback acquired through sharing the ACL Injury Prevention Program and the survey, I have gained a perspective and understanding about the depth of this program that has helped me become a better potential administrator. I would definitely implement several of the changes that were suggested by several of the respondents. I feel having this type of program at a school is a great asset, and I will continue to offer my ideas to administrators in the future.

Avenues I would continue to pursue would include an investigation into what sports see the most ACL injuries in student athletes. Although, as the literature states, competitive athletes involved in collision sports are more prone to this injury, I would like to research other sports and the circumstances of the injuries within them. There are many issues that play a role in this injury nationwide including the contact, non-contact aspect, the menstrual cycle time frame, along with the landing, planting, and pivoting aspects. ACL injury is an issue that I do not foresee diminishing anytime soon. As my advocacy of sports and physical activity continue, I will continue my exploration about how to help student athletes avoid such devastating injuries and stay healthy throughout their athletic careers.
REFERENCES


California State University, Chico. (n.d.). *Chico State athletics concussion management plan* [Unpublished document].


ANTERIOR CRUCIATE LIGAMENT (ACL)

INJURY PREVENTION PROGRAM

Objective:
To offer athletic administrators a convenient injury prevention program that high school coaches can implement into practices and trainings. This proactive ACL injury prevention program is a tool that can help prevent student athletes from experiencing this injury. Student athletes benefit from this program by optimizing their opportunity to stay healthy and strong, to continue in regular participation in their particular sport or sports.

Background:
The anterior cruciate ligament is located in the knee and helps with stability and movement. “Over 100,000 ACL injuries occur in the U.S. every year, with the highest incidence among individuals between the ages of 15 and 25” (Albaugh, Friedman, Cody & Ganley, 2010, p. 48). Tearing or rupture of the ACL is a detrimental injury that typically requires 6 to 12 months of recovery through the surgery and physical rehabilitation.

Today, ruptures of the ACL in younger athletes occur frequently in recreational and organized sports, in both contact and non-contact situations (Albaugh, Friedman, Cody & Ganley, 2010). ACL injuries can be caused by improper pivoting, jumping, or landing. Abrupt stops or twisting motions of the knee may also cause this injury. Coaches want to teach student athletes proper technique for jumping and landing to help protect them from this devastating injury.

The program that follows, consisting of six exercises that were based on research of previous ACL injury prevention programs, along with the guidance and expertise of the head athletic trainer at California State University, Chico. These exercises can be easily implemented on any field or court, because they are solely based on technique and the quality of body movement. These dynamic movements form an efficient program by enhancing the potential to correct neuromuscular imbalances (Myer, Ford, & Hewett, 2004).
**Program:**

Frequency of exercises is dependent on the specific sport and the competition schedule. The prevention program exercises can be implemented into a practice or training schedule when a coach feels it is appropriate. During preseason, or a time when the team is only practicing and not competing against other schools, is the optimal time for athletes to do these exercises. Exercises can be done 15-20 times per day, every day of training. This will help athletes to learn and understand the feeling of correct positioning when taking off and landing.

During the competitive part of the season, exercises may be reduced so that athletes do not deal with fatigue of muscles on competition days. Athletes may be limited to the number of times a week or the number of repetitions of exercises. It is the coach’s discretion on when and how many repetitions of these exercises need to be implemented.

**Key Terms:**

Coaches should use these terms to reinforce proper form with student-athletes.

- Athletic stance – feet shoulder width apart, knees slightly bent, knees in line with toes straight forward & back upright.

- Knees over toes - athlete should not have knees collapsing in towards each other.

- Soft Landing/Bent knees – athlete should absorb the landing with bent knees and landing on the balls of their feet then the through heals and ending with an athletic squat, continuing to have the knees in line with the toes.

**References:**


**Squat**

Starting & ending position are the same. Athlete should be in squat with knees over their toes.

Athlete should rise up onto toes with straight legs in an explosive movement, and then return to starting squat position to finish.

This is an example of incorrect positioning. Displayed here are knees not over toes and knees collapsing towards each other. If you see this error, make the correction with that athlete.

**Squat Jump**

Athlete begins in athletic stance with a preparation to jump, knees over toes.

Athlete should jump with an explosive movement in the air extending legs...

Athlete should absorb landing with bent knees. Key terms: Soft landing & knees over toes.
Tuck Jump

Athlete stands with feet shoulder width apart, and knees over her toes.

Athlete takes a preparation swing with arms to gain power for jump.

Athlete makes explosive movement bringing knees to their chest, while preparing for landing.

Athlete absorbs landing with bent knees along with the balls of their feet, then ending in an athletic squat continuing to have knees over toes.
Single Leg Quadrant Hops

Athlete is in an upright stance on one leg with a slight bend

Athlete makes small quick, and explosive hops from quadrant to quadrant, directions may vary.

Every landing should be soft with knee over the toes, and preparation for another quick hop.

180 Degree Jump

Athlete is in an upright athletic stance, then swings the arms and slightly squats in preparation to jump.

Athlete should jump straight in the air and turn 180 degrees, also known as a jump half turn.

Athlete should have awareness of the ground and prepare for landing.

Athlete lands in an athletic squat, preparing for a jump in the opposite direction. Above is a teachable moment: Athlete needs to pull her right foot in under her knee.
Single Leg Jump

Athlete is in slight squat standing on one leg. Athlete prepares with an arm and leg swing.

Athlete gains momentum and jumps for height and distance to return to landing.

Athlete ends with a soft landing keeping the flex knee over the toes to absorb force.

Above are 2 examples of how student-athletes may incorrectly cut or pivot during an athletic competition, female soccer being one of the leading sports prone to ACL injuries.
APPENDIX B
ACL INJURY PREVENTION PROGRAM

SURVEY

- To what extent as an administrator/AD are you concerned about injuries? Scale 1 - 10
  1 = Not at All & 10 = Very Much, please explain…

- How are you impacted by potential preventable injuries?

- What are the benefits of this type of injury prevention program?

- What liability factors do you think would be involved with this program?

- Would insurance policies change at your school due to an injury prevention program?
  If so, how?

- As a school administrator would you use this prevention program?
  If yes, what specific implementation steps should be taken with coaches?

- What challenges can you foresee occurring during the implementation of this type of program?

- Do you currently have an injury prevention program? If so what is it?

- What changes do you feel could be made to this program?

- Any other suggestions, questions or concerns about this ACL injury prevention program?

Confidential Information Below

Administrator’s Name:

Administrator’s School: