

AWARENESS, PERCEPTION, AND RISK MANAGEMENT PRACTICES RELATED
TO DISEASE CONTROL AND PREVENTION IN UNIVERSITY CLUB SPORT
PROGRAMS

By

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Disease control and prevention within campus recreation club sport programs is a critical element of a complete risk management plan. Without the proper planning, control, and prevention of communicable disease and bloodborne pathogen exposure in sport, campus recreation employees, participants and programs may be exposed to an increased risk of harm and liability. The purpose of this study was to: (1) examine club sport administrators' knowledge and perception of the risk to their employees and participants of acquiring a communicable disease and/or bloodborne pathogen-related illness or infection, (2) investigate risk management policies and practices pertaining to communicable diseases and bloodborne pathogens, and (3) determine if there is an association between the administrators' knowledge/perceived risk and their related risk management practices. The survey for this study was adopted and redesigned with permission from previous research (Stier, Schneider, Kampf, Haines, and Gaskins 2008). After a review of the literature and test of content validity by a panel of experts, the survey was granted approval from the Institutional Review Board. Current campus recreation club sport administrators in the United States ($N = 522$) listed in the *NIRSA*

2011 Recreational Sports Directory were recruited to participate in the online survey. The resultant population was 498 club sport program administrators with valid contact information. A 31.3% response rate was achieved with 156 (n=156) club sport program administrators submitting completed surveys. Of the nine chi square analyses that were performed, and the single bivariate correlation comparing awareness and importance to corresponding policies and procedures, six (60%) were significant ($p<0.05$). Of the respondents, 57.7% indicated that they did not have a written risk management plan that specifically addressed disease control and prevention, while 53.2% reported that they did not have a written exposure control plan that addressed bloodborne pathogens. Risk management plans in campus recreation club sport programs should address communicable diseases and bloodborne pathogens. Plans should include educating staff members and athletes/participants about the potential risks, as well as steps that can be taken to prevent and reduce such risks.

CHAPTER 1 INTRODUCTION

Sport is commonly defined as an organized, competitive and skillful physical activity requiring commitment and fair play (Spengler, Anderson, Connaughton, & Baker, 2009). Sport often involves a degree of physical contact or exertion, as well as the dedication of time and effort, and is meant to pose a challenge to the participants and competitors involved. Due to this nature, sport is an activity that involves a certain degree of risk. Injuries, incidents, and harm are no strangers to sport, and certain risks are inherent. The risk of physical injury is often unavoidable in sport. It would be impractical, if not impossible, to remove risk entirely from all sport settings. Eliminating all risk from sport would alter the nature and intensity of the activity, likely resulting in diminishing participation. With such modification and alteration, sport would be beyond recognition of the original intent and activity (Spengler et al., 2009). Due to the fundamental relationship between sport and risk, it is imperative to reduce the risk of harm through the application and execution of sound risk management policies and procedures.

Campus recreation programs are found in most colleges and universities today. Many educational institutions spend millions of dollars on such programs which are used to recruit new students, improve health and fitness, reduce stress, as well as foster student leadership, development, and personal wellness. Within campus recreation programs, several sub-programs often exist including fitness, aquatics, intramurals, outdoor pursuits, recreation facility operations, informal recreation, and club sports (National Intramural-Recreational Sports Association (NIRSA), 2010). Many

recreational sports professionals have accepted the responsibility of managing risk and reducing lawsuits in their campus recreational sport programs (Cooper, 1997).

The NIRSA is the professional association and governing body for campus recreation. It is the leading resource for professional and student development, education, and research in the field. The NIRSA includes nearly 4,000 professional, student, and associate members, and serves an estimated 5.5 million students who participate in campus recreational sports programs throughout the United States, Canada and other countries (NIRSA, 2010). NIRSA's mission and vision statements emphasize its commitment to providing educational and developmental opportunities for its professional and student members. The NIRSA also seeks to foster quality recreational programs, facilities, and services for differing campus recreation populations. The NIRSA demonstrates its commitment to excellence by promoting ethical and healthy lifestyle choices, as well as facilitating progressive research and professional standards within campus recreation (NIRSA, 2010).

Background

Although studies regarding risk management in campus recreation and club sport programs have been conducted since the '80s, recent research has provided influential results. Stier, Schneider, Kampf, Haines, and Gaskins (2008) surveyed intramural directors to determine common risk management policies, practices, and procedures for intramural activities at NIRSA institutions. The survey investigated the following risk management areas: rules and regulations, direct supervision, sportsmanship rating systems, restrictive policies, safety devices, certified officials, and background, experience, and training of respondents. The researchers stated that, "In terms of risk management efforts, only a small majority of respondents indicated that a professional

staff member had been given responsibility for overall risk management of the total intramural program/offering” (p. 42). Specifically, the researchers reported that approximately one-third (31%) of the respondents indicated that their schools did not have a written risk management plan, 42% did not have a designated employee responsible for risk management oversight, and 74% of the institutions did not have an oversight committee for risk management operations within their campus recreation department (Stier et al., 2008). Only 30% of the respondents indicated that Automated External Defibrillators (AEDs) were required at all intramural activities. Regarding Cardiopulmonary Resuscitation (CPR), 90% of the institutions required certification of professional employees, 79% required student employees to be certified and graduate assistants were required to have certification in 75% of the programs. First Aid certification was required of professional staff in 79% of the institutions, 68% required student employees to be certified, and graduate assistants were required to have the certification in 67% of the schools. Additionally, the study indicated that the Hepatitis B Vaccination was offered to professional staff in 24% of the institutions, to student employees in 29% and to graduate assistants at 24% of the schools. Furthermore, the vast majority (98%) of the intramural programs documented all injuries that occurred in intramural activities. Finally, just 1% of the respondents indicated that their intramural programs required their participants to have a physical (medical) examination prior to participation, and only 13% of the institutions required proof of medical insurance prior to participation (Stier et al., 2008). Stier et al. (2008) concluded that, “developing a safe environment for intramural and sport activities for college students at NIRSA institutions is of utmost concern for campus recreation directors” (p. 42).

In another study, Schneider, Stier, Kampf, Gaskins, and Haines (2008) investigated risk management policies and procedures of club sport campus recreation programs within NIRSA 4-year institutions. The purpose of their study was to investigate risk management practices within club sport programs with an emphasis on: documentation, club sport travel, coaches, supervision, use of off-campus facilities, access to athletic trainers, and medical insurance. They found the majority of club sport programs did not require (a) medical examinations (4% required) prior to participation, (b) professional campus recreation employee supervision of home event activities (12% required), or (c) athletic trainers to be present at home events (35% required). In addition, the majority of club sport programs did not require their coaches to have CPR or First Aid certification (32% required CPR, 13% required AED, and 27% required First Aid). Additionally, only 17% of campus recreation directors reported requiring an AED at all home club sport competitions. Finally, the requirement of having ambulances present at competitions was not highly reported, with the club sport of rugby having the highest requirement at 7% and ice-hockey, soccer, and lacrosse following with 4%. Such risk management oversights may expose an organization to liability particularly due to a lack of properly trained personnel, supervision, or failure to address emergency and universal precaution response procedures (Schneider et al., 2008).

Schneider et al. (2008) further emphasized, "Club sport programs are not requiring medical exams, physical supervision, or medical care at home events. In addition, if club sport programs are not requiring a coach to have appropriate certifications (First Aid, CPR, AED), ambulance presence at home competitions, professional supervision at home competitions, and access to athletic trainers, then there are potential legal

liability problems related to the lack of properly trained personnel, supervision, and accountability to address emergency response procedures at these events”. (p. 75) As a result of this study, campus recreation administrators were advised to take a greater initiative in working more closely with their institution’s legal counsel to determine specific courses of action for risk management in an effort to reduce injuries, lawsuits, and liability (Schneider et al., 2008).

Conatser and Ledingham (2010) suggested important steps to reduce risk and exposure associated with infectious diseases in physical activity and sport environments, especially those that take place in schools. Due to the sharing of common items and facilities, and the increased potential for skin-to-skin or person-to-person contact, the authors stressed that physical activity in the school environment needs specific attention to help reduce and prevent disease transmission. Influenza A H1N1 (Swine flu), Methicillin-Resistant Staphylococcus Aureus (MRSA; commonly referred to as flesh eating bacteria), Pink Eye, and Infectious Mononucleosis are common and serious infectious diseases found not only in the school environment, but also in sport. Because these infectious diseases can be highly contagious, the use of shared sports equipment, direct contact between participants, unsanitary locker room conditions, as well as injuries and exposure to bodily fluids provide possible routes for infection, and should be appropriately addressed (Conatser & Ledingham, 2010).

Human Immunodeficiency Virus (HIV) and the Hepatitis B Virus (HBV) are two additional infectious diseases that can spread in the sport environment as well. The article emphasized that participants with such diseases should not be completely banned from participating in physical activity, however they should not take part in

higher-risk activities (based on an increased incidence of person-person contact) such as wrestling and boxing. It was further noted that many school districts have designed and implemented well-developed guidelines and procedures for disease control and prevention (Conatser & Ledingham, 2010).

Statement of the Problem and Purpose of the Study

Previous studies have addressed many risk management issues in club sport programs. There is a need, however, to better understand risk management as it pertains to disease control and prevention. Disease control and prevention within club sport programs is a critical element of a complete campus recreation risk management plan. Without the proper planning, control, and prevention of disease and bloodborne pathogen exposure in sport, campus recreation employees, participants and programs may be exposed to an increased risk of harm and liability. The purpose of this study was to (1) examine club sport administrators' knowledge and their perception of the risk to their employees and participants of acquiring a communicable disease and/or bloodborne pathogen-related illness or infection, (2) investigate risk management policies and practices pertaining to communicable diseases and bloodborne pathogens, and (3) determine if there is an association between the administrators' knowledge/perceived and their related risk management practices.

Significance of the Study

Club sport program administrators were surveyed on their knowledge and perception of the risk associated with communicable diseases. This study evaluated the scope and nature of risk management procedures relevant to preventing or reducing the risk of communicable diseases in campus recreation club sport programs. It is expected that this study will inform club sport program administrators of gaps in their risk

management policies and procedures related to communicable disease and bloodborne pathogen exposure and control. The results of this study may assist club sport program administrators in identifying and correcting weaknesses within their overall risk management plan, with a specific focus on disease control and prevention.

Research Questions

The following research questions guided this study:

1. Are campus recreation club sport program administrators aware of the risk of communicable diseases to employees and participants? How do they perceive such risks?
2. What is the scope and nature of risk management practices relevant to preventing or reducing the risk of communicable diseases in campus recreation club sport programs?
3. Is there an association between club sport administrators' perceptions of the risk of communicable diseases and the implementation of relevant risk management practices?

CHAPTER 2 LITERATURE REVIEW

Risk Management

Risk management has been defined as “a course of action designed to reduce risk (probability or likelihood) of injury and loss to sport participants, spectators, employees, management, and organization” (Spengler et al., 2009, p. viii). Spengler et al. (2009) identified the benefits of risk management in sport which include (1) injury and death prevention, (2) reducing negligence and legal claims, (3) preventing financial losses, and (4) reducing stress and negative publicity as a result of risk-related incidents. With the growing numbers of campus recreation programs and participants, a sound risk management plan is paramount to the overall success of a recreational sports program.

Risk Perception

From many different standpoints, over the past 50 years, researchers have been evaluating and studying risk (Bauer, 1960; Celsi, Rose, & Leigh, 1993; Cox, 1967; Fischhoff, Slovic, Lichtenstein, Read, & Combs, 1978; Lepp & Gibson, 2003; Slovic & Weber, 2002). Such specificity in research has led to the categorizing of risk into various areas including risk assessment, risk communication, risk management, and risk reduction (Seigrist, Keller, & Kiers, 2005). Aside from such focused areas, risk can also be more broadly divided into both an objective and subjective perspective. The consequences of exposure to most risk factors can be quantified objectively in terms of the frequency of occurrence and the severity of injury or financial loss suffered (Fuller & Drawer, 2004). From the subjective view, risk is defined as “a concept that human beings have invented to help them understand and cope with the dangers and uncertainties of life” (Slovic & Weber, 2002, p. 4). Therefore, risk assessment is not only

concerned with objective or statistical levels of risk (often presented as a percentage value), but also with the subjective or perceived levels of risk, determined by the individual characteristics of the participants involved (Fuller & Drawer, 2004).

Theories of risk perception have been based on several issues, such as an individual's knowledge, personality, economics and culture. Mowen and Minor (1998) defined perceived risk as "one's perception of the overall negativity of a course of action based upon an assessment of the possible negative outcomes and the likelihood that those outcomes will occur" (p. 176). Overall perception of risk is made up of two components: (1) physical perception, which relates to the factual information received through the sensory system, and (2) cognitive perception, which relates to the mental processes that determine how a reaction to the information received is elicited. Physical perception of situations is normally rapid and enables individuals to respond to changing circumstances in sport-related activities. However, cognitive perceptions are formed over time and are adjusted with the accumulation of knowledge and experience. In sport and athletic participation, Fuller and Drawer (2004) pointed out that in terms of cognitive risk perception and knowledge, "those involved in sport perceive sports facilities, equipment or activities to be dangerous if they know (or think they know) that they are dangerous" (p. 353).

Evaluating the concepts behind the theory of perceived risk is often accomplished through a procedural, step-wise method, referred to as Robinson's five-stage model. According to Robinson's five-stage model, Stage 1 is defined as Attraction, where individuals first experience a need for stimulation and autonomy, entering into potential involvement and activity where risk elements exist. Stage 2 is labeled as Cognitive

Appraisal, where a comparison between the individual's perceived situational risk of the activity and their perceived ability to address the particular risk is carried out. Here, the individual must address the two dimensions of task uncertainty which include: (a) the probability of failure (i.e., outcome uncertainty) and (b) the nature of the consequences regarding failure, ranging from potentially minimal harm to potential catastrophic injury and/or death (Cox & Rich, 1964). In a situation where an individual's perception of the situational risk stemming from the activity is greater than their perceived ability to deal with or treat the risk, the individual anticipates a failure outcome, experiencing feelings of threat, fear, or anxiety, ultimately contributing to inhibited participation in the activity. However, in situations where an individual's perceived ability to effectively handle and treat the risky element within an activity equals or exceeds their perceived situational risk, the individual anticipates success. Risk with participation is treatable or existent at a manageable level of negative risk consequence, resulting in a greater probability of participation. In Stage 3 of Robinson's Model (Decision Making), an individual's cognitive evaluation of the risk and their ability to handle the risk lead to either an avoidance of the activity, due to too great or unmanageable risk, or participation in the activity with manageable or treatable levels of risk. Stage 4, Performance Experiences, involves the individual's perceptions regarding their performance effectiveness. In this stage, feelings of control lead to effective performance, successful outcome, and correct task strategy. Comparatively, feelings of fear or anxiety signal poor performance, along with an unsuccessful outcome and a need for adjustment (Robinson, 1992). An individual who experiences a greater feeling regarding their performance effectiveness will likewise experience more satisfaction and probability for future participation in the

activity. The final stage of Robinson's Model, Stage 5, is known as Intuitive-Reflective Appraisal. In this stage individuals are information and knowledge seekers, with motivation to understand the factors behind their success and failure outcomes. Individuals examine and appraise their performance, identifying successful and unsuccessful elements, as well as revealing the causes of their performance experiences. Such reflection has the capacity to significantly influence the expectancies of future actions and outcomes (Weiner, 1986).

Significance of a Risk Management Plan

When designing a risk management plan, developing a framework and foundation for the plan is critical. Initially, recognition and identification of potential risks (harms and hazards) must be performed. This is followed by classifying those potential risks, which is done by analyzing risks by frequency (how often is a risk likely to occur) and severity (if a risk does occur how severe will it be to the organization). Finally, treating the risks must be carried out. This is accomplished by developing and executing organized policies and procedures in an effort to eliminate/avoid, transfer, retain, and/or reduce risks (Spengler, Connaughton, & Pittman, 2006).

With a well-developed risk management plan in place, the consequential results of risk incidents are decreased. The most prominent consequences of inadequate risk management in sport are injuries, fatalities, litigation, and liability. When risk is inappropriately managed, either through a lack of proper planning, policy, and/or procedures, an organization may be exposed to severe consequences. These include but are not limited to injuries, fatalities, financial loss, loss of time and/or organizational resources, stress, negative publicity, and allegations of negligence and subsequent legal claims (Spengler et al., 2006).

Tort Liability

As stated by Garner (2000), a tort is considered “a civil wrong for which a remedy may be obtained, usually in the form of damages; or a breach of duty that the law imposes on everyone in the same relation to one another as those involved in a given transaction” (p. 1210). Injury in the form of physical injury, property damage, or harm to reputation, without intent is defined as an unintentional tort. An example of an unintentional tort could be an injury to a club sport participant that resulted from a club sport employee failing to carry out a reasonable action as they should have (an act of omission), or performing an act that they should not have (an act of commission) which caused the physical injury (Cotten & Wolohan, 2010). Tort claims often involve an injury resulting from participation in a sport or physical activity, with the injured party seeking monetary compensation for the damages they incurred. A sound risk management plan can reduce tort claims, or at the very least, reduce the liability associated with such claims (Stier et al., 2008).

Negligence

A very common allegation in sport-related lawsuits is negligence. Negligence, is defined as, “the failure to exercise the standard of care that a reasonably prudent person would have exercised in a similar situation; or any conduct that falls below the legal standard established to protect others against unreasonable risk of harm, except for conduct that is intentionally, wantonly, or willfully disregarding of others’ rights” (Garner, 2000, p. 846). Unreasonable conduct occurs when a reasonable person falls short of protecting another from a foreseeable risk of harm (Cotten & Wolohan, 2010). Negligence is comprised of four essential elements including: duty (protecting the participant from an unreasonable risk of harm), breach of duty (failure to protect the

participant from unreasonable risk of harm), injury (participant suffers damage to their person, property, or reputation), and finally causation (breach of duty must be the reason the injury occurred). An individual or service provider cannot be found negligent unless all four elements are present. If any one element is not fulfilled, there is no negligence (Cotten & Wolohan, 2010).

Foreseeability

In some circumstances liability becomes a matter of whether the risk of injury was foreseeable. As Garner (2000) states, “(foreseeability) is the quality of being reasonably anticipated” (p. 522). With foreseeability, the specific nature of an injury is not necessarily the primary concern, but rather the act of foreseeing that injury or the possibility of that harm was likely to occur. Foreseeability is grounded in foresight, and how the reasonable, prudent professional must be able to predict and foresee dangers and risks that pose a threat to participants (Cotten & Wolohan, 2010). Garner (2000) states, “Foreseeability, along with actual causation, is an element of proximate cause in tort law” (p. 522).

Campus Recreation Programs

Over the past few decades, campus recreation programs have increased dramatically in both numbers and size of programs. As previously mentioned, today, the NIRSA includes nearly 4,000 professional, student and associate members throughout the United States, Canada and other countries. Located in both public and private colleges and universities, campus recreation programs within NIRSA serve an estimated 5.5 million students (NIRSA, 2010). Typically within campus recreation programs, several programs exist including but not limited to intramurals, aquatics, outdoor pursuits, fitness, and club sports.

Club Sport Programs

Both public and private colleges and universities have experienced increased development and expansion within their club sport programs. Club sport programs typically offer a wide variety of sports and activities, and continue to recruit more participants (students, faculty, and community members) each academic year (Stier et al., 2008). Club sport programs, however, present a unique challenge to university and campus recreation administrators, especially in regard to managing risk.

Although club sport organizations fall under university control, they typically operate with a significant level of autonomy. Utilizing the university name, facilities, and equipment, club sports are defined as student-run organizations. They often lack direct supervision (more prominently found in intramural sport programs) and are typically left on their own for a majority of practices, games, and event activities. With such responsibility falling on the students themselves, it is imperative that club sport program administrators examine individual clubs to determine specific risk management needs. Once this has been accomplished, they should develop and implement risk management policies and procedures, and communicate with and train their participants and staff appropriately in an effort to reduce injuries, and ensure that appropriate measures are taken when injuries do occur (Fawcett, 1998).

Risk identification and analysis, and the development of risk management policies and procedures, specific to club sport programs, are critical to loss reduction and prevention. Policies and procedures that protect not only the participants (mostly students) but also the institutions, provide additional value and credibility to club sport programs. Not only do club sports seek to provide an outlet for sport and physical activity on college campuses, but they also aim to protect their participants and

institutions against the risks (injuries) involved in participation, as well as the potential for lawsuits and losses (financial, reputation, etc.; Fawcett, 1998; Mull, Bayless, Ross, & Jamieson, 1997).

Bloodborne Pathogens and Communicable Diseases

As awareness of the benefits of risk management continues to rise in campus recreation programs (Young, Fields, & Powell, 2007), the perception of the risk associated with exposure to bloodborne pathogens and communicable diseases should be evaluated, as well as what risk management policies and practices are utilized in an effort to reduce exposure to bloodborne pathogens and communicable diseases.

Injuries and bleeding are not uncommon to sport, and present a favorable environment for bloodborne pathogen exposure and disease transmission. Bloodborne pathogens are microorganisms found in human blood which can cause infection, disease, and even death. Over the past two decades, the focus of bloodborne pathogen exposure and risk in sport has been on the Human Immunodeficiency Virus (HIV) and Hepatitis B Virus (HBV). These viruses have the capability of not only killing the host in which they reside, but also being transmitted through blood or bodily fluid to an unsuspecting athlete (Zeigler, 1997).

Although there have been no reported cases of Human Immunodeficiency Virus (HIV) transmission during athletic competition, the exposure to blood in the athletic environment poses the risk of infection. HIV infects T-lymphocyte cells found within the human immune system. T-lymphocyte cells are essential to the human immune system. As cells are attacked by the HIV virus, the immune system begins to fail leaving the body extremely vulnerable to numerous secondary infections and diseases. It is this secondary infection susceptibility that often leads to fatality in those with HIV. Currently

there is no cure for HIV, and in sport, open-wound injuries with severe bleeding pose the greatest risk for transmission if not handled with the proper procedures and precautions (Zeigler, 1997).

The Hepatitis B Virus (HBV) is an infectious disease that involves inflammation and damage to the liver. It is one of five different types of hepatitis that have been identified, and can result in chronic liver damage (cirrhosis), liver cancer, and even liver failure. As Zeigler (1997) states, "Hepatitis B Virus can be transmitted through very small amounts of blood and bodily fluid and can remain infectious for a week or longer, even in dried blood" (p. 3). Those who initially become infected with hepatitis may present "flu-like" symptoms as illness sets in; however, 50% of those infected each year are asymptomatic, showing no signs of infection. Although a strong immune system, as well as the HBV vaccination (licensed in 1981 by the Federal Drug Administration) can successfully defend against HBV, 6 to 10% of individuals are incapable of beating the virus and become chronic HBV-infected individuals and carriers. The reduction of potential HBV transmission in sports can be achieved by practicing risk management and disease control precautions (Zeigler, 1997).

Bereket-Yucel (2007) sampled and analyzed the blood and sweat of 70 male Olympic wrestlers (ages 18-30 years) for evidence of Hepatitis B infection. More than one-third of the wrestlers reported that they had competed and trained with bleeding or open wounds. Although it was found that none of the wrestlers had an active HBV infection, as evidenced by a lack of antibodies to the virus, the virus was detected in the blood of nine (13%; Bereket-Yucel, 2007). The researcher pointed out that such a finding suggests that the wrestlers had concealed infections. Such an occurrence was

possible due to the intense training of the wrestlers leading to temporary suppressions in normal immune response. Even more remarkable, was that eight (11%) also had particles of the virus present in their sweat, with levels of the virus found in the blood similarly matching those found in the sweat. Such findings led to the conclusion that sweat, like open wounds and mucous membranes, could be another way of transmitting the infection (Bereket-Yucel, 2007).

Methicillin-Resistant Staphylococcus Aureus (MRSA), often referred to as “staph,” has become a primary concern in sport settings. Infections and outbreaks have been documented from high school to professional sport settings. MRSA has been labeled as a “flesh eating superbug” due to the fact that it is a form of staph that has become resistant to common antibiotics (Centers for Disease Control and Prevention (CDC), 2008). Although MRSA is treatable, it usually begins on the skin as a small boil and has the capacity to cause major illness including infected wounds, blood infections, pneumonia, and even death (Menaker & Connaughton, 2009). In 2005, it was estimated that over 95,000 cases of MRSA were reported in the United States, resulting in 18,650 deaths (Klevens et al., 2007).

Outbreaks of MRSA are caused by direct physical contact between people, or from unclean equipment, shared or unclean uniforms, discarding of wound dressings inappropriately, untreated whirlpools, as well as improperly disinfected locker rooms (CDC, 2008). Several organizations have published official/position statements (National Athletic Trainers Association (NATA), 2005, 2007; National Federation of State High School Associations (NFSHSA), 2007) and guidelines (CDC, 2008; National Collegiate Athletic Association (NCAA), 2008), which include suggestions and

instructions for reducing the risk of MRSA infections in sport. Such published guidelines address but are not limited to: proper wound cleaning procedures, avoiding the sharing of athletic gear and clothing, proper disinfecting procedures for athletic gear and equipment (mats, weight benches, exercise equipment, etc.), sanitizing facility locker rooms, training coaches and athletic personnel on exposure control procedures and prevention techniques, and encouraging sport participants to shower immediately after physical activity.

In a recent study, Ryan et al. (2011) tested 240 samples taken from fitness facilities for the presence of MRSA. Swabs were collected from fitness equipment (cardiovascular machines, barbells, benches and weights) housed in three different fitness facilities including a university fitness facility, a community fitness facility and a high school fitness facility. Swab samples were specifically taken at three different intervals throughout the day and retrieved from places on equipment that were commonly sweated on or touched. Of the 240 swab samples taken, the researchers found no isolates of MRSA in any of the three fitness centers tested. The researchers have emphasized that policies and procedures that are already in place in fitness facilities may be proactively effective, “because routine cleaning may decrease bacterial colonization on gym surfaces, it is possible that the disinfectant is in fact effective in reducing or eliminating the presence of staphylococci (Ryan et al., 2011, p. 149). Their findings may lead some to believe that MRSA does not pose a significant threat in the sport environment, however, careful consideration of the limitations and nature of this particular study are warranted. For instance, the researchers did not use a broth enhancement with their swab cultures, which may have been more effective in exposing

the presence of MRSA isolates. Others point out that the sample size of 240 cultures may have been too small, and that future studies would be wise to also examine the clothing and other equipment used by the fitness facility patrons, as well as doorknobs, water fountains, and locker room areas for MRSA isolates (Ryan et al., 2011). Birdwell (2011) further noted that in fitness centers “a couple other studies found MRSA in wetter areas around sinks and on towels” (p. 2). It was also noted that it was important not to abandon current precautions, policies, and procedures in fitness areas for reducing the transmission of MRSA, and “that more sensitive testing measures may reveal lower levels of MRSA contamination on gym surfaces” (Birdwell, 2011, p. 2).

A recent infectious disease that has garnered major media attention is the Influenza A H1N1 virus, or more commonly referred to as Swine Influenza (Swine Flu). The Centers for Disease Control and Prevention has identified Swine Influenza as a respiratory disease of pigs caused by type A influenza. Swine Influenza has become a threat to humans due to constant changes and mutations in the virus strain. In the past, the CDC received reports of approximately one human Swine Influenza virus infection every one to two years in the U.S., but from December 2005 through February 2009, a major increase in the cases of humans infected with Swine Influenza was reported. In 2009, it was classified as a world-wide pandemic (Kates, 2010).

Swine Influenza is transmitted through person-to-person contact and can cause mild to severe illness, as well as death in some instances. Although an individual with Swine Influenza exhibits common “flu-like symptoms” (severe fever, nausea, tiredness, dry cough, sore throat, runny/stuffy nose) it differs from a cold and usually comes on suddenly. With such characteristics, Swine Influenza poses a particular threat to

athletes. The nature of athletic participation is to push the body to its physical capacity, often resulting in dehydration and a depressed immune system. Athletes also share dressing rooms, personal equipment, weight rooms and weight equipment as well as footballs, basketballs, volleyballs or soccer balls providing an increased opportunity to pass the virus from person-to-person (Kates, 2010).

The Swine Flu has affected sport events across the United States and Mexico. For example, the state of Texas experienced a high incidence of high school athletic event cancellations in May 2009 due to the Swine Influenza outbreak. For example, Swine Influenza forced the suspension of the baseball and softball seasons, and eliminated the regional track championships (ESPN, 2009a). Similarly, at Tulane University, 31 football players and 6 volleyball players contracted the virus in a matter of a few days. As Katie Thomas, stated, "Health experts say college athletes are perfect candidates for the Swine Flu, the virus known as H1N1, has infected more than one-million Americans. The strain tends to spread most quickly among young adults who have not built immunity to flu strains. Because the athletes share dorm rooms, cafeterias and sometimes unsanitary, locker rooms it's an ideal environment for the flu" (Thomas, 2009, p. D3).

Bloodborne Pathogen and Communicable Disease Policies in Sport

The National Collegiate Athletic Association (NCAA) established a bloodborne pathogen policy in 1988 entitled *NCAA Guideline 2H: Bloodborne Pathogens and Intercollegiate Athletics*. The policy was updated in June of 1994 (Zeigler, 1997). The NCAA policy states that any player who is bleeding should be removed from an event or competition immediately. Players are not permitted to return until exposure control procedures are properly carried out and the bleeding has stopped. The NCAA does not

restrict players from competing if they are HIV positive; however, individual institutions have created stricter athlete participation policies for those competing with HIV. Similarly, the National Athletic Trainers' Association (NATA) and the American College of Sports Medicine (ACSM) published a joint position statement on bloodborne pathogens in sport. Their stance significantly emphasizes the importance of education, training, and compliance in disease control and prevention procedures to reduce the transmission of bloodborne infections in sport (Zeigler, 1997).

In 2008, the NCAA (2008) in conjunction with the CDC (2008) published educational posters and brochures on MRSA risk and prevention. These have been distributed to all institutional members and their professional employees in order to further reinforce MRSA risk and preventative policies (Menaker & Connaughton, 2009).

The Occupational Safety and Health Administration (OSHA), a federal agency of the U.S. Department of Labor, has established standards designed to provide safer working conditions to protect employees. In campus recreation programs, OSHA standards attempt to protect employees from being unnecessarily exposed to potential health hazards in the workplace (Ross & Young, 1995). However, the guidelines do little for the actual participants (students) in club sport programs in terms of protecting them from disease transmission.

Ross and Young (1995) noted that despite the increasing health risks associated with bloodborne diseases, many campus recreational sport departments have not developed disease control programs. Whether governed by federal regulations or not, it was emphasized that a legal and moral responsibility to reasonably protect employees

exists. Failing or neglecting to act, places not only the employees, but entire campus recreation communities at risk (Ross & Young, 1995).

In 1991, with input from the CDC, OSHA issued a standard entitled Occupational Exposure to Bloodborne Pathogens (29 CFR 1910.1030; CDC, 2008). The main purpose of the bloodborne pathogen standard is to eliminate or reduce occupational exposure to blood and other potentially infectious materials in the work environment that could lead to disease or death. This hazard, and the resulting protective standards, effects employees in many types of jobs and are not exclusive to the healthcare or medical industry. Almost all employed individuals in America fall under OSHA's jurisdiction with only a few exceptions (Spengler et al., 2006).

The OSHA's purpose is to improve the safety and health of United State's employees by setting, maintaining, and enforcing standards in workplace health and safety. Established primarily in regard to the HIV and HBV, OSHA's bloodborne pathogen standard was enacted to reduce occupational exposure to blood and other potentially infectious materials (OPIM) in the workplace environment. Specifically, the bloodborne pathogen standard applies to all employers whose employees could be "reasonably anticipated" as a result of performing their job duties to come in contact with blood, as well as OPIM (Eickhoff-Shemek, Herbert, & Connaughton, 2009). As Eickhoff-Shemek, Herbert, & Connaughton (2009) acknowledged, "the occupational exposure must be reasonably anticipated...the employer would reasonably anticipate that contact with blood or other potentially infectious materials would occur when a health/fitness employee, certified in First Aid, is performing First Aid procedures to a bleeding client" (p. 21). In the operation of sport and recreation programs such employees would likely

include, but would not be limited to, those who are responsible for administering First Aid and CPR, lifeguards, physical therapists, and athletic trainers. The OSHA bloodborne pathogen standard is a type of administrative law. Not only can the failure to comply result in health and safety risks, but it can also result in fines as well as civil liability (Eickhoff-Shemek, Herbert, & Connaughton, 2009).

Under the current OSHA Bloodborne Pathogen standard, only employees of campus recreation programs are covered. Club sport program participants, officers, and those students who participate in the actual sports are not directly protected under OSHA standards because they are not employees. The need for disease control and prevention policies and practices is crucial to protect participants, as well as employees, in campus recreation programs.

Despite club sport programs falling under their respective university jurisdiction, they (as primarily student-run organizations) typically operate with a great deal of autonomy. This unique aspect of club sport results in professional staff (e.g., supervisors and coordinators) members often taking a secondary role (although they assist the clubs in planning, scheduling, and organizing). Therefore, in certain aspects of club management, students hold a significant amount of responsibility. For example, it is the students who are often the first responders when injuries and incidents arise within their respective clubs and not certified athletic trainers, team physicians, or professional staff (campus recreation employees).

During club sport practices and/or events, an incident or injury may occur that could result in the exposure to communicable diseases for participants. Although such infectious diseases can be transmitted through non-athletic populations, the nature of

sport often creates a more susceptible environment for infectious disease transmission. With the proximity of body contact in participation, shared equipment and facility use, as well as the threat of an athlete's depressed immune system with over-training, sports often yield a hearty environment for infectious diseases to thrive (Nessel, 2009). Ross and Young (1995) noted that the HIV and HBV were two diseases that had generated considerable concern in relation to bloodborne pathogen exposure and transmission. However, in more recent years, communicable diseases such as MRSA, and even more recently, Influenza A H1N1 (Swine Flu) have raised additional concerns over the spread of diseases and of the importance of related risk management policies and practices.

It would be prudent for club sport programs to meet the standards and guidelines set forth by their respective university's legal counsel and health department regarding disease control and prevention. Club sports programs should also develop risk management policies and procedures in terms of an exposure control plan, education and training, preventative measures, post-exposure follow-up, and record-keeping (Ross & Young, 1995).

Ross and Young (1995) surveyed 300 University campus recreation directors in relation to bloodborne pathogen prevention practices. Of the 157 respondents, 28% were not aware of the OSHA standard (Occupational Exposure to Bloodborne Pathogens 29 CFR 1910.1030), while an additional 28% were aware of the OSHA standard but did not provide HBV vaccinations to their employees free of charge. In relation to an exposure control plan within their broader risk management plan, 54% did not provide bloodborne pathogen training to employees, and 30% did not require "first responders" to participate in bloodborne pathogen training. The reasons most often

cited for not providing such training were the amount of staff time required and budgetary reasons. Furthermore, 84% did not have a specific budget for bloodborne pathogen training, and 33% did not have an emergency control plan in place.

In another study, Connaughton, DeMichele, Horodyski, and Dannecker (2002) investigated exposure control plans (ECPs) for bloodborne pathogens in campus recreation fitness programs. Of the sample (n=53), 71.7% of the respondents revealed that their campus recreation fitness programs did have an ECP in place. An even larger number, 83%, indicated that a specific staff member was responsible for responding and caring for injured participants. Injury response responsibilities were also written out and included within the job descriptions and manuals in 84% of the programs. In regards to universal precautions, 75.5% indicated that a specific staff member was trained in universal precaution procedures; however, the majority of respondents revealed that they did not provide consistent training, either on a semiannual, annual, or more frequent schedule. Hepatitis B vaccinations for staff members who were designated to respond to injuries were only required in 7.1% of programs, however, they were recommended by 54.8% of these programs whose staff members were identified as first responders (Connaughton et al., 2002).

The research suggests there is a need for club sport programs, with initiative taken by club sport program administrators, to place a more serious emphasis on developing and practicing risk management related to disease control and prevention.

CHAPTER 3 METHOD

The purpose of this study was to: (1) examine club sport administrators' knowledge and perception of the risk to their employees and participants of acquiring a communicable disease and/or bloodborne pathogen-related illness or infection, (2) investigate risk management policies and practices pertaining to communicable diseases and bloodborne pathogens, and (3) determine if there is an association between the administrators' knowledge/perceived risk of communicable disease and bloodborne pathogens and their related risk management practices. The methodology for the current study will be presented in the following four sections: (a) participants, (b) instrument, (c) procedures, and (d) data analyses.

Participants

For this study, the entire population of club sport administrators in the United States was selected. Club sport program administrators at all 4-year colleges and universities in the United States that were institutional members of the NIRSA were included. This included 522 club sport program directors that were listed in the *NIRSA 2011 Recreational Sports Directory* (NIRSA, 2011). The population included both public and private colleges/universities, from all six NIRSA regions.

Instrument

The survey instrument was partially adopted and modified, with permission, from two previous studies conducted by Stier et al. (2008) and Schneider et al. (2008). A number of the items were redesigned to address the specific focus of bloodborne pathogen and communicable disease control policies and practices within club sport programs. The researcher formulated a preliminary questionnaire consisting of three

sections which included: (a) club sport program and administrator demographics, (b) knowledge and risk perception, and (c) risk management practices associated with disease control and prevention.

To establish content validity, the preliminary questionnaire was submitted to a panel of seven experts for review. The panel of experts included four university professors and three club sport program administrators. Two of the university professors specialize in law and risk management in sport and recreation. The other university professors specialize in campus recreation, survey development and data analyses. The club sport program administrators were from large university campus recreation departments. The expert panel was asked to review the survey for clarity, comprehensiveness, format, and if any questions should be added, deleted or reworded. Following the feedback of the expert panel, the original instrument was slightly modified in areas of item adequacy and word clarity. The final survey instrument and informed consent form was approved by the University of Florida's institutional review board (IRB).

Club Sport Program and Administrator Demographics

For the purpose of this study, various demographic variables were measured, including size of the club sport program, number of active clubs, number of staff, administrator academic background and certification level, gender, and prior club sport communicable disease and bloodborne pathogen incidences. The Club Sport Program and Administrator Demographic items utilized questions with forced responses.

Knowledge and Risk Perception Associated with Disease Control and Prevention

The knowledge of and the perceived risk of an adverse outcome is considered as an important factor in adopting and implementing risk management practices. Research

on infectious diseases and other health-related issues has found perceived risk to be a key predictor in taking preventative measures. Although no known instrument currently exists to measure perceived risk for communicable disease and bloodborne pathogen transmission in sport, having a means of gauging perceived risk is valuable (van der Pligt, 1998). Exploring how and why persons are motivated to adopt and implement preventive behavior, identifying the educational needs of the target population, and evaluating efforts designed to promote and adopt preventive action, are all outcomes of perceived risk analysis (Beach, 2005). In order to measure the knowledge and risk perception related to bloodborne pathogen and communicable disease transmission within campus recreation club sport programs, a combination of items with forced responses and a 7-point Likert-type scale were utilized.

Risk Management Practices Associated with Disease Control and Prevention

Risk management practices associated with disease control and prevention have previously been investigated within sport and campus recreation programs, but they have not yet been specifically examined within campus recreation club sport programs. Risk management practices regarding communicable disease and bloodborne pathogens were analyzed. The Bloodborne Pathogen and Disease Control items utilized a forced response question format.

Procedures

Utilizing Qualtrics™, an online survey software program, a link to the informed consent and survey was sent, via email, to all 522-club sport program directors listed in the *2011 NIRSA Recreation Sports Directory* (NIRSA, 2011). Only 498, however, had valid contact information and email addresses, and 24 emails were returned (bounced back) due to incorrect email addresses. Repeated attempts to obtain the correct contact

information subsequently failed. A follow-up email was sent to all non-responders one week after the initial email. A final email reminder was sent to all non-responders, one week after the second email. A total of 156 completed and useful surveys were received, for a response rate of 31.3%.

Data Analyses

To conduct data analyses, data were entered into Version 17.0 of SPSS™ for Windows (SPSS™, 2008). Descriptive statistics were calculated for the demographics, knowledge and risk perception items, as well as general risk management practice items and those specifically pertaining to bloodborne pathogens and communicable disease. Correlations and chi square analyses between the knowledge and/or risk perceptions and risk management practices were also performed.

CHAPTER 4 RESULTS

The results of this study are presented in the following four sections: (a) club sport program respondent demographics, (b) risk management policies and practices associated with disease control and prevention, (c) knowledge and risk perception associated with disease control and prevention, and (d) chi square and correlation analyses performed to determine if there were significant comparisons and evaluate differences between the knowledge and/or risk perceptions of communicable diseases and bloodborne pathogens, and corresponding risk management practices.

Descriptive Statistics

Club Sport Program Respondent Demographics

Demographic variables are presented in Table 4-1. Of the respondents, 64.8% were male and 35.2% were female. The institutional student size, from which the campus club sport programs originated, ranged from a minimum of 1,071 students to a maximum of 56,000 students ($M=16,359.4$; $SD=12,313$). For the purpose of data analyses the size of the institution, based upon student population, was categorized into small, medium, and large schools. Small schools had less than 7,500 students (29.3%), medium schools had between 7,501 and 20,000 students (37.0%), and large schools had student populations of 20,001 or more (33.7%). The number of registered club sport organizations reported by each school, ranged from 1 club to 57 registered clubs. For the purpose of data analyses, small club sport programs were categorized as having 1 to 15 registered clubs (38.4%), medium programs between 16 and 30 registered clubs (33.7%), and large programs had 31 or more registered clubs (27.9%). The number of full-time professionals each club sport program employed ranged from 0 to 40. It is

believed that the response of 40 full-time club sport program employees was a misunderstanding of the specific survey question, and was a significant outlier. The large majority (98.7%) of respondents reported having between one and two full-time employees within their club sport program ($M=1.91$; $SD=4.19$).

Club sport program administrators were asked several questions regarding their educational backgrounds and certifications pertaining to risk management. Of 156 respondents, 115 (73.7%) had taken academic courses, during their educational degree, related to legal issues in sport and recreation. Similarly, 98 (63.2%) of the respondents had taken academic courses related to risk management. Professional club sport administrators were also asked to identify which certifications they held. The large majority of respondents reported having CPR certification (91.7%), AED certification (87.2%), and First Aid certification (85.9%). Only 48.7% of the respondents reported having training in bloodborne pathogens.

Risk Management Policies and Practices Associated with Disease Control and Prevention

Descriptive statistics of policies and practices related to risk management associated with disease control and prevention are presented in Table 4-2. The majority (87.8%) of club sport programs required documentation of all physical injuries that occur within their program. Conversely, physical (medical) examinations were not required for club sport participants in 87.8% of the club sport programs. Similarly, 76.3% of club sport programs did not require their participants to complete a health screening/history form prior to participation. First Aid kits were required at all club sport activities in 53.8% of the programs.

Table 4-3 displays the different certifications that campus recreation club sport programs required of professional employees, graduate assistants, student employees, coaches, and participants. For professional employees, 74.4% of programs surveyed required CPR certification, while 68.6% required First Aid certification, and 67.3% required AED certification. Bloodborne Pathogen training was required for 35.5% of professionals by their club sport programs. For graduate assistants, 41.7% of the programs required CPR certification, 41.0% required First Aid, and 38.5% required AED. Bloodborne Pathogen training for graduate assistants was required by 21.8% of the programs. For student employees, CPR certification was required by 64.7% of club sport programs, with First Aid certification (57.7%) and AED certification (56.4%). Bloodborne Pathogen training was required by 28.8% of club sport programs for student employees. For club sport program coaches, the certification requirements were vastly different. No certifications were required of coaches by 42.3% of club sport programs, while CPR certification was required in only 35.9% and First Aid certification in 32.7%. Only 9.0% required bloodborne pathogen training for coaches. For club sport participants, 58.3% of programs did not require any certifications. Of the certifications that were required by club sport programs for their participants, CPR certification (16.0%), First Aid certification (12.2%) and AED certification (12.2%) were the most frequently required. Bloodborne pathogen training for participants was only necessary in 4.5% of club sport programs. The majority (76.3%) of campus recreation club sport programs reported that they did provide some certification classes/training (i.e., AED, BBP, CPR, First Aid, etc.) to employees, coaches, or participants.

Of the respondents, 57.7% reported not having a risk management plan addressing disease control in their respective club sport program. Additionally, 53.2% stated that they did not have a risk management plan that addressed bloodborne pathogens (Table 4-4). In terms of training employees in universal precautions that could be implemented in the handling of any blood or other potentially infectious material (OPIM), 53.3% of the programs reported that they trained employees in such practices, while 42.9% indicated that they did not. In regard to having written policies and procedures addressing equipment contaminated with blood or OPIM, 62.8% reported that they did not. Additionally, 48.1% indicated that they did not have written policies and procedures addressing fields/facility areas contaminated with blood or OPIM. A total of 56.1% of club sport programs reported having written policies and procedures that addressed how to handle a bleeding incident, while 40.0% did not. When asked if their club sport program had consulted a health/medical professional regarding bloodborne pathogen and communicable disease policies and procedures, 54.8% stated they had not, and 55.1% reported not having consulted any professional organizations (i.e., ACSM, NASM, NATA, NCAA, OSHA, environmental health and safety department, etc.) regarding such policies and procedures.

Descriptive statistics related to cancellations or closures due to bloodborne pathogen and communicable disease incidents in club sport programs are displayed in Table 4-5. A large majority of respondents reported never cancelling or postponing an event due to a communicable disease (84.0%), or bloodborne pathogen (86.5%), incident. However, 3.8% of the respondents reported that their club sport program had cancelled or postponed an event due to a communicable disease incident, and 2.6%

had cancelled or postponed an event for a bloodborne pathogen incident. A large majority (76.3%) of club sport programs reported never having to close a field/facility or portion of a field/facility due to a communicable disease incident, while 75.6% had never closed a field/facility due to a bloodborne pathogen incident. A few (6.4%) programs reported closing a field/facility due to communicable disease incident, and slightly more (7.7%) reported closures due to a field/facility bloodborne pathogen incident.

Knowledge and Risk Perception Associated with Disease Control and Prevention

The perceived importance, held by administrators, of taking academic courses related to legal issues and risk management in sport and recreation was ranked from moderate to high. For academic courses related to legal issues, 88.4% stated that they considered taking legal issues courses to be somewhat important to extremely important. Results were similarly ranked for the perceived importance, held by administrators, of taking courses in risk management in sport and recreation. Of the respondents, 92.3% thought risk management courses were important. Certifications and training for professional club sport staff were also thought to be of moderately high importance. For AED certification, 37.2% thought it was extremely important, while 47.4% indicated CPR training and certification was extremely important, and 43.2% reported likewise for First Aid certification. Bloodborne pathogen training was perceived to be of slightly lower importance with 29.0% responding that it was somewhat important, and 33.5% responding that it was very important. In terms of the perceived importance of club sport programs providing training for the aforementioned certifications to employees, coaches, and participants, a total of 88.4% of respondents found it to be important practice (Table 4-6).

The awareness, held by club sport administrators, of bloodborne pathogens and communicable diseases in relation to the risks they pose within a club sport program is described in Table 4-7. When asked how familiar they were with the risks associated with communicable diseases and bloodborne pathogens (MRSA, HIV, HBV, Swine Flu, etc.) in the sport environment, 46.8% reported that they were somewhat familiar with the potential risk in the sport environment. Additionally, 52.3% ranked the associated risk of bloodborne pathogens as being somewhat risky. The majority (59.6%) of respondents thought there was an increased risk of transmitting bloodborne pathogens and communicable diseases in heavy contact sports such as rugby, wrestling, and boxing. However, when asked if they thought there was increased risk of transmitting bloodborne pathogens and communicable diseases in sports that require the wearing of significant amounts of protective equipment such as in fencing, lacrosse, and ice hockey the responses were divided among neither agree or disagree (17.9%), somewhat agree (28.2%), and agree (34.6%).

Club sport administrators were also questioned on the practice and perceived importance of the Hepatitis B vaccination in their club sport programs (Table 4-8). Exposure to Hepatitis B in the workplace is covered under the OSHA bloodborne pathogen standard (29 CFR 1910.1030 & 29 CFR 1910.1200; CDC, 2008), however, this only covers employees of club sport programs and not the officers and students who participate in the actual sports. Accordingly, club sport programs were questioned as to whether their club sport program offered the Hepatitis B vaccination to professional employees, graduate assistants and student employees. Overall, 27.1% of respondents reported that they offered the Hepatitis B vaccination to professional

employees, 16.4% offered it to graduate assistant employees, and 18.3% offered it to student employees. When asked if respondents thought it was important that club sport employees receive the Hepatitis B vaccination, 53.9% reported it to be important, while 13.0% perceived it to be unimportant.

In Table 4-9 the descriptive statistics pertaining to the perceived importance of having policies related to reducing the risk of bloodborne pathogen and communicable disease transmission in campus recreation club sport programs are provided. A majority (88.4%) of the respondents, rated the importance of identifying which athletes/clubs were most-at-risk for contracting and transmitting communicable diseases and bloodborne pathogens as important. Results were similar in the perceived importance of having written policies and procedures regarding addressing communicable diseases and bloodborne pathogens, with 92.9% of respondents perceiving such practices as important. Comparably, when asked to rate the importance of identifying which athletes/clubs were believed to be most at risk for communicable disease and bloodborne pathogen transmission in club sport programs only 9.6% perceived this to be of extreme importance, however, 20.0% responded that having written policies and procedures addressing communicable disease and bloodborne pathogens in club sport programs was of extreme importance. When asked to what degree club sport programs perceived the importance of having a written exposure control plan that addressed bloodborne pathogens, 85.8% reported that such practice was important. The vast majority (90.4%) of respondents reported perceiving the importance of training employees in universal precautions that could be implemented in the handling of any

blood or potentially infectious material should an injury occur during practice or competition as important.

Club sport program respondents also perceived having written policies and procedures regarding equipment contaminated with blood or OPIM as somewhat important (37.0%) and very important (32.5%). Respondents believed having written policies and procedures regarding fields/facility areas contaminated with blood or OPIM as somewhat important (34.6%) and very important (37.2%) as well. In regard to having specific written policies and procedures addressing a bleeding incident, 45.5% of respondents perceived this to be very important, while responses concerning the consulting of a health/medical professional regarding bloodborne pathogen and communicable disease policies and procedures was divided between somewhat important (34.5%) and very important (35.7%). Overall, respondents perceived the importance of having a written risk management plan that addressed disease control and prevention as somewhat important (36.5%) to very important (35.3%).

Chi Square and Correlation Analyses

Table 4-10 through Table 4-19 display the results of the chi square and correlation analyses which were performed to analyze the differences, associations, and relationships between variables. Specifically, the analyses were performed to determine if there was an association between club sport administrator perceptions of the risk of communicable diseases and bloodborne pathogens and relevant risk management practices. The chi square analyses compared variables measured on the 7-point Likert scale (importance and awareness), with the practice variables that were measured as forced-response variables (yes or no; Thomas, Nelson & Silverman, 2005).

Bivariate correlations were utilized to compare awareness against importance. Partial correlations were performed to analyze the relationships between summed awareness, importance, and risk management practices related to communicable disease and bloodborne pathogens in club sport programs, while controlling for both the size of the institution (based on student population) and the respective club sport program (based on number of registered clubs; Thomas, Nelson & Silverman, 2005).

Table 4-10 provides the results of the comparison between the perceived awareness of risk associated with communicable diseases and bloodborne pathogens, and whether or not club sport programs have written risk management plans that address disease control and prevention. As the p -value was >0.05 , there was no statistically significant difference ($p=0.08$) in the perceived awareness of risk between clubs that do and do not have a written management plan that addresses disease control and prevention. Of the respondents, 32.9% indicated that they did not have a written risk management plan that addressed disease control and prevention, while 76.5% perceived their awareness of the risk associated with communicable diseases and bloodborne pathogens to be fairly high. Of those who responded that their club sport program did indeed have a written risk management plan that addressed disease control and prevention (67.1%), a total of 43.4% perceived their awareness of the associated risk to be quite high while a total of 24.9% perceived their awareness of the risk to be low. A total of 7.8% of club sport programs who did not have a written risk management plan that addressed disease control and prevention perceived their awareness of the associated risk as low.

Table 4-11 displays a similar comparison, however, here the perceived importance of having a written risk management plan that addresses disease control and prevention is provided. A significant difference ($p=0.001$) exists in the perceived importance of clubs who do and do not have a risk management plan that addresses disease control and prevention. A majority of respondents (67.3%) reported that they did not have a written risk management plan that addressed disease control and prevention, however, of that number, a total of 74.4% still thought it was an important to very important practice. Those who stated they did have a written risk management plan that addressed disease control and prevention (32.7%), also agreed (100%) that having such a plan was important. No respondents who had a written risk management plan that addressed disease control and prevention thought it was unimportant.

The chi square analyses in Table 4-12 compare perceived importance to whether or not a program actually had a written exposure control plan that addresses bloodborne pathogens. A significant difference ($p=0.001$) exists in the perceived importance of bloodborne pathogens between programs that do and do not have a written exposure control plan. A moderate majority of respondents (63.9%) reported that they did not have a written exposure control plan that addressed bloodborne pathogens, however, of that number, a total of 78.8% still thought it was an important to very important practice. Among those who stated they did have a written exposure control plan that addressed bloodborne pathogens within their club sport program (36.1%), 98.2% agreed that such practice and policy was important.

Table 4-13 displays the results of the chi-square analyses of the comparison between the perceived importance and actual practice of club sport programs training

employees in universal precautions that can be implemented in the handling of blood or potentially infectious material. As the p-value was less than 0.05, ($p=0.001$), a significant difference was found. For instance, despite 100% of respondents perceiving such practices to be important, 42.9% reported not training employees in universal precautions.

Table 4-14 provides the results of the comparison between the perceived importance and actual practice of club sport programs having written policies and procedures regarding how to handle equipment contaminated with blood or OPIM. A strong ($p=0.001$) difference in responses was found between those that did and did not have a plan. Of those who stated that they did have policies and practices regarding equipment contaminated with blood or OPIM (28.8%), 100% perceived such practices to be important. Of those who did not have a plan regarding contaminated equipment, only 69.9% believed having a plan was important. No club sport program respondents perceived such policies and practices as unimportant.

Similarly, the perceived importance of club sport programs having written policies and procedures regarding fields/facility areas contaminated with blood or OPIM was compared to actual practices (Table 4-15). As shown, there was a significant difference ($p=0.001$) in perceived importance between club sport programs that did and did not have a policy regarding contaminated fields/facilities. A total of 11.4% who did not have such policies and practices thought they were unimportant, and 16.1% were indifferent about their importance. Of those who did have such policies and procedures for contaminated fields/facility areas (44.2%), a total of 95.6% thought it was important

practice, while only 1.4% thought it was unimportant and 2.9% were indifferent toward the importance.

In Table 4-16, the results of the comparison between perceived importance and actual practice of club sport programs having written policies and procedures addressing a bleeding incident are provided. A strong difference was found ($p=0.001$) in perceived importance of handling a bleeding incident between club sport programs that did and did not have a plan detailing how to manage such an incident. Of the 44.2% clubs that did not have a plan, 69.5% perceived it to be important. A total of 55.8% of the respondents indicated that they did have such written policies and procedures regarding bleeding incidents within their club sport program. Of those, a total of 97.7% thought that such policies and practices were important. Only 2.3% of those who had the policies and procedures were indifferent about their importance, perceiving it to be neither important nor unimportant.

In Table 4-17, the perceived importance of club sport programs consulting a health/medical professional regarding bloodborne pathogens and communicable disease policies and procedures, was compared to having a written risk management plan. No significant difference was found ($p=0.309$) in the perceived importance of contacting a medical professional between clubs that did and did not have a written risk management plan, suggesting that the perception of importance had no impact on whether or not a program consulted a medical professional regarding such policies and practices. Of those who responded that their club sport program did not consult a health/medical professional regarding practices related to bloodborne pathogens and communicable disease (72.7%), a total of 78.6% still perceived the importance of such

practices to be important to extremely important. Of the 72.7% who indicated that they did not consult a health/medical professional regarding bloodborne pathogens and communicable disease practices, a total of 21.1% perceived it to be unimportant, and 15.2% were indifferent, perceiving it to be neither important nor unimportant. Of the 27.2% who did consult a health/medical professional regarding bloodborne pathogens and communicable disease practices within their club sport program, a total of 83.3% perceived it to be an important practice. No respondents who stated that they did have such practices in their club sport program thought it was unimportant, however, 16.7% were indifferent toward the importance, perceiving it to be neither important nor unimportant.

In Table 4-18 the results of the difference between awareness of an increased risk of transmitting bloodborne pathogens and communicable disease in sports that require the wearing of significant amounts of protective equipment (i.e., fencing, lacrosse, and ice hockey) and the practice of having a plan addressing these issues is provided. No statistically significant difference was found ($p=0.562$) in perceived importance of wearing protective equipment and having a plan, suggesting that awareness does not impact club sport programs as to whether they have a written plan in regard to reducing transmission of communicable disease and bloodborne pathogens in sports requiring significant amounts of protective equipment. Of the 67.3% club sport program respondents who stated that they did not have such practices pertaining to protective equipment within their risk management plan, 66.7% stated they were aware of the risks associated with such protective equipment. However, 16.2% that did have such practices also reported that they were not aware of the associated risks, while 17.1%

were neither aware nor unaware. Those that stated that they did indeed have risk management policies and procedures regarding contaminated equipment (32.7%), also reported (74.5%) that they were aware of the associated risks. However, 5.9% who stated that they did have such policies and procedures also stated that they were unaware of the possible associated risks, while 19.6% were neither aware nor unaware.

In Table 4-19, the results of the correlations performed to further examine the existence and strength of the relationship between the perceived factors of awareness and importance with corresponding risk management policies and practices of club sport programs are provided. The first correlation displayed is a bivariate correlation between the perceived importance of club sport programs identifying which athletes/clubs are most-at-risk for contracting and transmitting communicable disease and bloodborne pathogens, to the awareness of an increased risk of transmitting bloodborne pathogens and communicable disease in heavy contact sports (i.e., rugby, wrestling, and boxing). A strong relationship was found ($p=0.001$) suggesting that perception has an impact on practice regarding bloodborne pathogen risk in heavy contact sports.

Partial correlations are displayed in Table 4-19. The partial correlations compare the summed totals of the awareness and importance variables related to communicable disease and bloodborne pathogens, to corresponding summed totals of the risk management practice variables. The strength of the relationship can be analyzed between awareness, importance, and practice, while controlling for size in order to examine whether the size of the institution or campus recreation club sport program has a significant impact on the associations.

The first two partial correlations control for the size of the institution. The first partial correlation compares the total perceived awareness of bloodborne pathogens and communicable disease to the total risk management practices associated with bloodborne pathogens and communicable disease. This relationship is statistically significant ($p=0.035$) after controlling for the size of the institution, suggesting that size was not a confounder. The second correlation, comparing the total perceived importance of bloodborne pathogens and communicable disease to the total risk management practices associated with bloodborne pathogens and communicable disease displayed similar results, as the relationship was also significant ($p=0.001$).

Additionally, when controlling for the size of the club sport program, the relationship between awareness of bloodborne pathogens and practices regarding bloodborne pathogens was significant ($p=0.030$). Finally, the fourth partial correlation, which compared the total perceived importance to the risk management practice related to communicable disease and bloodborne pathogens, was also significant ($p=0.001$) while controlling for the size of the club sport program. Overall, the partial correlations performed were all significant, even when controlling for the variables of size (i.e., size of institution and of club sport program), suggesting that size was not a confounder.

Table 4-1. Descriptive statistics of demographic variables (*n* = 156)

Variable	Category	<i>N</i>	%
Size of Institution (number of students)	Small (<7,500)	45	29.3
	Medium (7,501-20,000)	57	37.0
	Large (20,001>)	52	33.7
Public or Private Institution	Public	110	70.5
	Private	46	29.5
Gender of Club Sport Director	Male	101	64.8
	Female	55	35.2
Number of Full-Time Club Sport Program Professionals	Minimum	0	0.65
	Maximum	40	98.7
	Mean	1.91	0.65
Number of Registered Clubs in Club Sport Program	Small (1-15)	59	38.4
	Medium (16-30)	52	33.7
	Large (31>)	43	27.9
Took a Legal Issues Course During Academic Degree	Yes	115	73.7
	No	41	26.3
Took a Risk Management Course During Degree	Yes	98	63.2
	No	57	36.8
Certifications held by Club Sport Professionals	Automatic External Defibrillator (AED)	136	87.2
	Bloodborne Pathogen	76	48.7
	Cardio-Pulmonary Resuscitation (CPR)	143	91.7
	First Aid	134	85.9

Table 4-2. Descriptive statistics of addressing general risk management club sport programs

Variable	Category	<i>N</i>	%
	Yes	16	10.3
Are physical (medical) examinations required of all club sport participants?	No	137	87.8
	Unsure	3	1.9
	Yes	33	21.2
Do you require the club sport program participants to complete a health screening/history form prior participation?	No	119	76.3
	Unsure	4	2.5
	Yes	84	53.8
Does your program require a First Aid kit at all club sport activities?	No	68	43.5
	Unsure	4	2.7
	Yes	137	87.8
Does your club sport program document all physical injuries that occur within your program?	No	16	10.3
	Unsure	3	1.9

Table 4-3. Descriptive statistics of club sport program certification policy and practice

Variable	Category	N	%
What certifications do you require of your club sport professional employees?	Attend a Departmental Orientation Certification	33	21.2
	Automated External Defibrillator (AED)	105	67.3
	Bloodborne Pathogen	55	35.3
	Cardio-Pulmonary Resuscitation (CPR)	116	74.4
	First Aid	107	68.6
	No Certification Required	31	19.9
	Sport Specific Certification	10	3.2
	Other	5	6.4
What certifications do you require of your club sport graduate assistants?	Attend a Departmental Orientation Certification	19	12.2
	Automated External Defibrillator (AED)	60	38.5
	Bloodborne Pathogen	34	21.8
	Cardio-Pulmonary Resuscitation (CPR)	65	41.7
	First Aid	64	41.0
	No Certification Required	23	14.7
	Sport Specific Certification	1	0.6
	Other	26	16.7

Table 4-3. continued

Variable	Category	N	%
What certifications do you require of your club sport student employees?	Attend a Departmental Orientation Certification	22	14.1
	Automated External Defibrillator (AED)	88	56.4
	Bloodborne Pathogen	45	28.8
	Cardio-Pulmonary Resuscitation (CPR)	101	64.7
	First Aid	90	57.7
	No Certification Required	29	18.6
	Sport Specific Certification	11	7.1
	Other	2	1.3
What certifications do you require of your club sport coaches?	Attend a Departmental Orientation Certification	14	9.0
	Automated External Defibrillator (AED)	38	24.4
	Bloodborne Pathogen	14	9.0
	Cardio-Pulmonary Resuscitation (CPR)	56	35.9
	First Aid	51	32.7
	No Certification Required	66	42.3
	Sport Specific Certification	16	10.3
	Other	9	5.8

Table 4-3. continued

Variable	Category	N	%
What certification do you require of your club sport participants?	Attend a Departmental Orientation Certification	16	10.3
	Automated External Defibrillator (AED)	19	12.2
	Bloodborne Pathogen	7	4.5
	Cardio-Pulmonary Resuscitation (CPR)	25	16.0
	First Aid	19	12.2
	No Certification Required	91	58.3
	Sport Specific Certification	5	3.2
	Other	15	9.6
Does your club sport program provide training for the above-mentioned to employees, club sport coaches, and participants?	Yes	119	76.3
	No	35	22.4
	Unsure	2	1.3

Table 4-4. Descriptive statistics of risk management specifically related to bloodborne pathogens and communicable diseases

Variable	Category	<i>N</i>	%
Does your club sport program have a written risk management plan that addresses disease control and prevention?	Yes	52	33.3
	No	90	57.7
	Unsure	14	9.0
Does your club sport program have a written exposure control plan that addresses bloodborne pathogens?	Yes	56	35.9
	No	83	53.2
	Unsure	17	10.9
Does your club sport program train employees in universal precautions that can be implemented in the handling of any blood or body fluids should an injury occur during practice or competition?	Yes	83	53.3
	No	67	42.9
	Unsure	6	3.8
Does your club sport program have written policies and procedures regarding equipment contaminated with blood or infectious material?	Yes	45	28.8
	No	98	62.8
	Unsure	13	8.4
Does your club sport program have written policies and procedures regarding fields/facility areas contaminated with blood or infectious material?	Yes	69	44.2
	No	75	48.1
	Unsure	12	7.7
Does your club sport program have written policies and procedures addressing a bleeding incident?	Yes	87	56.1
	No	62	40.0
	Unsure	6	3.9

Table 4-4. continued

Variable	Category	<i>N</i>	%
Has your club sport program consulted a health/medical professional regarding bloodborne pathogen and communicable disease policies and procedures?	Yes	47	30.4
	No	85	54.8
	Unsure	23	14.8
Has your club sport program consulted professional organizations regarding bloodborne pathogen and communicable disease exposure and control?	Yes	43	27.6
	No	86	55.1
	Unsure	27	17.3

Table 4-5. Descriptive statistics related to cancelations or closures due to bloodborne pathogens and communicable disease incidents

Variable	Category	<i>N</i>	%
	Yes	6	3.8
Has your club sport program ever canceled or postponed an event due to a communicable disease-related incident?	No	131	84.0
	Unsure	19	12.2
	Yes	4	2.6
Has your club sport program ever canceled or postponed an event due to a bloodborne pathogen-related incident?	No	135	86.5
	Unsure	17	10.9
	Yes	10	6.4
Has your club sport program every closed a facility or portion of a facility due to a communicable disease-related incident?	No	119	76.3
	Unsure	27	17.3
	Yes	12	7.7
Has your club sport program every closed a facility or portion of a facility due to a bloodborne pathogen-related incident?	No	118	75.6
	Unsure	26	16.7

Table 4-6. Descriptive statistics of the perceived importance of education, training, and certifications

Variable	Category	N	%
To what degree do you perceive the importance of taking courses related to legal issues? (M=5.53; SD=1.262)	Not at all Important	1	0.6
	Very Unimportant	2	1.3
	Somewhat Unimportant	10	6.5
	Neither Important or Unimportant	5	3.2
	Somewhat Important	46	29.7
	Very Important	59	38.1
	Extremely Important	32	20.6
	To what degree do you perceive the importance of taking courses related to risk management? (M=5.89; SD=1.081)	Not at all Important	0
Very Unimportant		4	2.6
Somewhat Unimportant		2	1.3
Neither Important or Unimportant		6	3.8
Somewhat Important		30	19.3
Very Important		67	42.9
Extremely Important		47	30.1
To what degree do you perceive the importance of professional club sport staff holding current certification in Automatic External Defibrillation? (M=5.86; SD=1.272)		Not at all Important	1
	Very Unimportant	3	1.9
	Somewhat Unimportant	7	4.5
	Neither Important or Unimportant	9	5.8
	Somewhat Important	24	15.4
	Very Important	54	34.6
	Extremely Important	58	37.2
	To what degree do you perceive the importance of professional club sport staff holding current certification in Bloodborne Pathogen Training (BBP)? (M=5.59; SD=1.155)	Not at all Important	1
Very Unimportant		1	0.65
Somewhat Unimportant		6	3.9
Neither Important or Unimportant		14	9.1
Somewhat Important		45	29.0
Very Important		52	33.5
Extremely Important		36	23.2
To what degree do you perceive the importance of holding current certification in Cardiopulmonary Resuscitation (CPR)? (M=6.12; SD=1.244)		Not at all Important	1
	Very Unimportant	1	0.65
	Somewhat Unimportant	1	0.65
	Neither Important or Unimportant	8	5.2
	Somewhat Important	15	9.7
	Very Important	55	35.75
	Extremely Important	73	47.4

Table 4-6. continued

Variable	Category	<i>N</i>	%
To what degree do you perceive the importance of professional club sport staff holding current certification in First Aid? (<i>M</i> =6.09; <i>SD</i> =1.095)	Not at all Important	1	0.6
	Very Unimportant	1	0.6
	Somewhat Unimportant	3	1.9
	Neither Important or Unimportant	8	5.2
	Somewhat Important	19	12.3
	Very Important	56	36.2
	Extremely Important	67	43.2
To what degree do you perceive the importance of your club sport program providing training for the above-mentioned certifications to employees, club sport coaches, and participants? (<i>M</i> =5.62; <i>SD</i> =1.210)	Not at all Important	2	1.3
	Very Unimportant	1	0.6
	Somewhat Unimportant	4	2.6
	Neither Important or Unimportant	11	7.1
	Somewhat Important	37	23.9
	Very Important	69	44.5
	Extremely Important	31	20.0

Table 4-7. Descriptive statistics of perceived awareness of bloodborne pathogens and communicable disease

Variable	Category	N	%
How familiar are you with the risks associated with communicable diseases and bloodborne pathogens (MRSA, HIV, HBV, Swine Flu, etc.) in the sport environment? (M=5.12; SD=1.107)	Not at all Familiar	0	0
	Very Unfamiliar	5	3.2
	Somewhat Unfamiliar	14	9.0
	Neither Familiar or Unfamiliar	6	3.8
	Somewhat Familiar	73	46.8
	Very Familiar	49	31.4
	Extremely Familiar	9	5.8
How would you rate the risk associated with communicable diseases/bloodborne pathogens within your club sport program? (M=4.45; SD=1.152)	Not at all a Risk	1	0.6
	Very Unrisky	14	9.0
	Somewhat Unrisky	15	9.7
	Neither Risky or Unrisky	28	18.1
	Somewhat Risky	81	52.3
	Very Risky	14	9.0
	Extremely Risky	2	1.3
I feel that there is an increased risk of transmitting bloodborne pathogens and communicable diseases in heavy contact sports such as rugby, wrestling, and boxing? (M=5.97; SD=0.846)	Strongly Disagree	0	0
	Disagree	2	1.3
	Somewhat Disagree	0	0
	Neither Agree or Disagree	6	3.8
	Somewhat Agree	20	12.8
	Agree	93	59.6
	Strongly Agree	35	22.5
I feel that there is an increased risk of transmitting bloodborne pathogens and communicable diseases in sports that require the wearing of significant amounts of protective equipment such as fencing, lacrosse, and ice hockey? (M=4.96; SD=1.314)	Strongly Disagree	3	1.9
	Disagree	6	3.8
	Somewhat Disagree	11	7.1
	Neither Agree or Disagree	28	17.9
	Somewhat Agree	44	28.2
	Agree	54	34.6
	Strongly Agree	10	6.5

Table 4-8. Descriptive statistics of the perceived importance and risk management practices regarding the Hepatitis B vaccination

Variable		Category	<i>N</i>	%
Does your club sport program offer the following employees Hepatitis B vaccination?	Professional	Yes	40	27.1
	Employees	No	108	72.9
	Graduate	Yes	21	16.4
	Assistants	No	107	83.6
	Student	Yes	25	18.3
	Employees	No	111	81.7
Do you think it is important that club sport employees receive the Hepatitis B vaccination? (<i>M</i> =4.63; <i>SD</i> =1.333)		Not at all Important	7	4.6
		Very Unimportant	2	1.3
		Somewhat Unimportant	11	7.1
		Neither Important or Unimportant	51	33.1
		Somewhat Important	42	27.3
		Very Important	32	20.8
		Extremely Important	9	5.8

Table 4-9. Descriptive statistics of the importance of policy for reducing the risk of bloodborne pathogen and communicable disease transmission

Variable	Category	N	%
How would you rate the importance of identifying which athletes/clubs are most at-risk for contracting and transmitting communicable diseases and bloodborne pathogens? (M=5.41; SD=1.046)	Not at all Important	3	1.9
	Very Unimportant	0	0
	Somewhat Unimportant	3	1.9
	Neither Important or Unimportant	12	7.8
	Somewhat Important	59	37.8
	Very Important	64	41.0
	Extremely Important	15	9.6
How would you rate the importance of having written policies and procedures regarding addressing communicable diseases/bloodborne pathogens in your club sport program? (M=5.72; SD=0.828)	Not at all Important	0	0
	Very Unimportant	0	0
	Somewhat Unimportant	3	1.9
	Neither Important or Unimportant	8	5.2
	Somewhat Important	50	32.3
	Very Important	63	40.6
	Extremely Important	31	20.0
To what degree do you perceive the importance of your club sport program having a written risk management plan that addresses disease control and prevention? (M=5.35; SD=1.001)	Not at all Important	0	0
	Very Unimportant	0	0
	Somewhat Unimportant	8	5.1
	Neither Important or Unimportant	19	12.2
	Somewhat Important	57	36.5
	Very Important	55	35.3
	Extremely Important	17	10.9

Table 4-9. continued

Variable	Category	N	%
	Not at all Important	0	0
To what degree do you perceive the importance of your club sport program having a written exposure control that addresses bloodborne pathogens? (M=5.41; SD=0.952)	Very Unimportant	0	0
	Somewhat Unimportant	5	3.2
	Neither Important or Unimportant	17	11.0
	Somewhat Important	61	39.3
	Very Important	53	34.2
	Extremely Important	19	12.3
		Not at all Important	0
To what degree do you perceive the importance of your club sport program training employees in universal precautions that can be implemented in the handling of any blood or body fluids should an injury occur during practice or competition? (M=5.69; SD=0.963)	Very Unimportant	0	0
	Somewhat Unimportant	6	3.8
	Neither Important or Unimportant	9	5.8
	Somewhat Important	41	26.3
	Very Important	72	46.2
	Extremely Important	28	17.9
		Not at all Important	0
To what degree do you perceive the importance of your club sport program having written policies and procedures regarding equipment contaminated with blood or infectious material? (M=5.39; SD=1.044)	Very Unimportant	0	0
	Somewhat Unimportant	9	5.8
	Neither Important or Unimportant	16	10.4
	Somewhat Important	57	37.0
	Very Important	50	32.5
	Extremely Important	22	14.3

Table 4-9. continued

Variable	Category	N	%
To what degree do you perceive the importance of your club sport program having written policies and procedures regarding fields/facility areas contaminated with blood or infectious material? (M=5.31; SD=1.129)	Not at all Important	1	0.6
	Very Unimportant	3	1.9
	Somewhat Unimportant	7	4.5
	Neither Important or Unimportant	16	10.3
	Somewhat Important	54	34.6
	Very Important	58	37.2
	Extremely Important	17	10.9
To what degree do you perceive the importance of your club sport program having written policies and procedures addressing a bleeding incident? (M=5.63; SD=1.073)	Not at all Important	1	0.6
	Very Unimportant	0	0
	Somewhat Unimportant	5	3.2
	Neither Important or Unimportant	17	10.9
	Somewhat Important	33	21.2
	Very Important	71	45.5
	Extremely Important	29	18.6
To what degree do you perceive the importance of your club sport program consulting a health/medical professional regarding bloodborne pathogen and communicable diseases policies and procedures (M=5.27; SD=1.115)	Not at all Important	2	1.3
	Very Unimportant	2	1.3
	Somewhat Unimportant	3	1.9
	Neither Important or Unimportant	24	15.6
	Somewhat Important	53	34.5
	Very Important	55	35.7
	Extremely Important	15	9.7

Table 4-10. Practice of having a Risk Management Plan that Addresses Disease Control and Prevention

Perceived Awareness of Risk	Yes		No	
	Number	%	Number	%
1	1	0.96	0	0.0
2	12	11.5	2	3.9
3	13	12.5	2	3.9
4	20	19.2	8	15.7
5	50	35.7	31	60.8
6	8	7.7	6	11.8
7	0	0.0	2	3.9
Total	104		51	
χ^2	11.293			
p-value	0.08			

As the p-value is >0.05 ($p=0.08$), there is no statistically significant difference in perceived awareness of the risk of communicable disease/bloodborne pathogens between clubs that do and do not have a written risk management plan that addresses disease control and prevention.

Note: chi square analysis of the perceived awareness of the risk of communicable disease/bloodborne pathogens within club sport programs and whether club sport programs have a written risk management plan that addresses disease control and prevention.

Table 4-11. Have policies and procedures addressing disease control and prevention

Perceived Importance	Yes		No	
	Number	%	Number	%
1	0	0	0	0
2	0	0	0	0
3	0	0	8	7.6
4	0	0	19	18.1
5	10	19.6	47	44.8
6	27	52.9	28	26.7
7	14	27.5	3	2.9
Total	51		105	
χ^2	44.833			
p-value	0.001***			

***As the p-value is smaller than 0.05 (p=0.001) there is a statistically significant difference in perceived importance of club sport programs having written policies and procedures regarding having a risk management plan that addresses disease control and prevention between clubs that do and do not have such policies and procedures. Note: chi square analysis of the perceived importance of club sport programs having a written risk management plan that addresses disease control and prevention on the practice of club sport programs having a risk management plan that addresses disease control and prevention.

Table 4-12. Have a written exposure control plan addressing bloodborne pathogens

Perceived Importance	Yes		No	
	Number	%	Number	%
1	0	0	0	0
2	0	0	0	0
3	0	0	5	5.1
4	1	1.8	16	16.2
5	12	21.4	49	49.5
6	27	48.2	26	26.3
7	16	28.6	3	3.0
Total	56		99	
χ^2	40.803			
p-value	0.001***			

***As the p-value is smaller than 0.05 (p=0.001) there is a statistically significant difference in the perceived importance of a club sport program having a written exposure control plan between clubs who did and did not have a written exposure control plan.

Note: chi square analysis of the perceived importance of club sport programs having a written exposure control plan that addresses bloodborne pathogens on whether club sport programs have a written exposure control plan that addresses bloodborne pathogens.

Table 4-13. Practice of training employees in universal precautions

Perceived Importance	Yes		No	
	Number	%	Number	%
1	0	0	0	0
2	0	0	0	0
3	0	0	6	8.1
4	0	0	9	12.2
5	11	13.4	30	40.5
6	47	57.3	25	33.8
7	24	29.3	4	5.4
Total	82		74	
χ^2	44.520a			
p-value	0.001***			

***As the p-value is smaller than 0.05 (p=0.001) there is a statistically significant difference in perceived importance of club sport programs training employees in universal precautions that can be implemented in the handling of blood or OPIM between clubs who did and did not have such practice.

Note: chi square analysis of the perceived importance of club sport programs training employees in universal precautions that can be implemented in the handling of any blood or OPIM should an injury occur, on the practice of club sport programs training employees on universal precautions that can be implemented in the handling of any blood or OPIM should an injury occur.

Table 4-14. Have policies for contaminated equipment

Perceived Importance	Yes		No	
	Number	%	Number	%
1	0	0	0	0
2	0	0	0	0
3	0	0	9	8.3
4	0	0	16	14.7
5	9	20	48	44.0
6	24	53.3	26	23.9
7	12	26.7	10	9.2
Total	45		109	
χ^2	30.641			
p-value	0.001***			

*** As the p-value is smaller than 0.05 (p=0.001) there is a statistically significant difference in the perceived importance of club sport programs having written policies and procedures regarding equipment contaminated with blood or OPIM between clubs that did and did not have such policies and procedures.

Note: chi square analysis of the perceived importance of club sport programs having written policies and procedures regarding equipment contaminated with blood or OPIM on the practice of club sport programs having written policies and procedures regarding equipment contaminated with blood or OPIM.

Table 4-15. Have policies for contaminated field/facility areas

Perceived Importance	Yes		No	
	Number	%	Number	%
1	1	1.4	0	0
2	0	0	3	3.4
3	0	0	7	8.0
4	2	2.9	14	16.1
5	16	23.2	38	43.7
6	39	56.5	19	21.8
7	11	15.9	6	6.9
Total	69		87	
χ^2	35.729			
p-value	0.001***			

*** As the p-value is smaller than 0.05 (p=0.001) there is a statistically significant difference in perceived importance of club sport programs having written policies and procedures regarding fields/facility areas contaminated with blood or OPIM between clubs that did and did not have such policies and procedures.

Note: chi square analysis of the perceived importance of club sport programs having written policies and procedures regarding fields/facility areas contaminated with blood or OPIM on the practice of club sport programs having written policies and procedures regarding fields/facility areas contaminated with blood or OPIM.

Table 4-16. Have policies and procedures addressing a bleeding incident

Perceived Importance	Yes		No	
	Number	%	Number	%
1	0	0	1	13.0
2	0	0	0	0
3	0	0	5	7.2
4	2	2.3	15	21.7
5	14	16.1	19	27.5
6	48	55.2	23	33.3
7	23	26.4	6	8.7
Total	87		69	
χ^2	33.841			
p-value	0.001***			

***As the p-value is smaller than 0.05 (p=0.001) there is a statistically significant difference in perceived the importance of club sport programs having written policies and procedures regarding a bleeding incident between clubs that did and did not have such policies and procedures.

Note: chi square analysis of the perceived importance of club sport programs having written policies and procedures addressing a bleeding incident on the practice of club sport programs having written policies and procedures regarding a bleeding incident.

Table 4-17. Have policy of consulting a health/medical professional

Perceived Importance	Yes		No	
	Number	%	Number	%
1	0	0	2	1.8
2	0	0	2	16.7
3	0	0	3	2.7
4	7	16.7	17	15.2
5	10	23.8	43	38.4
6	20	47.6	35	31.3
7	5	11.9	10	8.9
Total	42		112	
χ^2	7.125			
p-value	0.309			

The p-value is greater than 0.01 ($p=0.309$). Therefore, no statistically significant difference exists in the perceived importance of club sport programs consulting a health/medical professional regarding bloodborne pathogens and communicable disease policies and procedures between clubs that did and did not consult a health/medical professional regarding bloodborne pathogens and communicable disease policies and procedures.

Note: chi square analysis of the perceived importance of club sport programs consulting a health/medical professional regarding bloodborne pathogens and communicable disease policies and procedures on the practice of club sport programs consulting a health/medical professional regarding bloodborne pathogens and communicable disease policies and procedures.

Table 4-18. Policies regarding contaminated equipment in heavy protective equipment sports

Perceived Awareness	Yes		No	
	Number	%	Number	%
1	0	0	3	2.9
2	1	1.96	5	4.8
3	2	3.9	9	8.6
4	10	19.6	18	17.1
5	14	27.4	30	28.6
6	19	37.2	35	33.3
7	5	9.8	5	4.8
Total	51		105	
X2	4.855a			
p-value	0.562			

The p-value is greater than 0.01 ($p=0.0562$). Therefore, there is no statistically significant difference in the perceived awareness of transmitting bloodborne pathogens and communicable disease in sports that require the wearing of significant amounts of protective equipment (e.g., fencing, lacrosse, and ice hockey) between clubs that did and did not have written policies and procedures regarding equipment contaminated with blood or OPIM.

Note: chi square analysis of the perceived awareness of an increased risk of transmitting bloodborne pathogens and communicable disease in sports that require the wearing of significant amounts of protective equipment (e.g., fencing, lacrosse, and ice hockey) on the practice of club sport programs having written policies and procedures regarding equipment contaminated with blood or OPIM.

Table 4-19. Correlations

Bivariate Correlation			
Variables	<i>r</i>	<i>p</i>	
Perceived Importance of Club Sport Programs identifying which Athletes/Clubs are Most-At-Risk for Contracting and Transmitting Communicable Disease and Bloodborne Pathogens on the Awareness of an Increased Risk of Transmitting Bloodborne Pathogens and Communicable Disease in Heavy Contact Sports (e.g., Rugby, Wrestling, and Boxing).	0.358	0.001	
Partial Correlations			
Variables	Controlling	<i>r</i>	<i>p</i>
Total Perceived Awareness of Bloodborne Pathogens and Communicable Disease compared with the Total Practices Associated with Bloodborne Pathogens and Communicable Disease	Size of Institution (Total Student Population)	0.172	0.035
Variables	Controlling	<i>r</i>	<i>p</i>
Total Perceived Awareness of Bloodborne Pathogens and Communicable Disease compared with the Total Practice Associated with Bloodborne Pathogens and Communicable Disease	Size of Campus Recreation Club Sport Program	0.177	0.030
Variables	Controlling	<i>r</i>	<i>p</i>
Total Perceived Importance of Bloodborne Pathogens and Communicable Disease compare with the Total Practice Associated with Bloodborne Pathogens and Communicable Disease	Size of Institution (Total Student Population)	0.334	0.001
Variables	Controlling	<i>r</i>	<i>p</i>
Total Perceived Importance of Bloodborne Pathogens and Communicable Disease compare with the Total Practice Associated with Bloodborne Pathogens and Communicable Disease	Size of Campus Recreation Club Sport Program	0.343	0.001

CHAPTER 5 DISCUSSION

Sport activities within campus recreation and club sport programs will always involve a certain amount of risk. Therefore, it is essential for such organizations to identify potential risks within the activities they oversee, and then address those risks in an effort to reduce them. While club sport program administrators are wise to focus on risks that are both known and perceived (based upon frequency and severity), it would also be prudent for them to account for new and emerging areas of risk that may pose a threat and potentially endanger the safety of either their staff or participants (Fuller & Drawer, 2004; Lee, Farley, & Kwon, 2010; Spengler, Anderson, Connaughton, & Baker, 2009). For example, an area of risk in the sport environment, which has recently received a lot of media attention, is exposure to bloodborne pathogens and communicable diseases.

General Risk Management in Club Sport Programs

Recent studies have suggested that campus recreation program administrators are indeed aware and concerned with many of the risks present in their programs and are taking action to reduce the occurrence of such risks, increase the safety of their participants, and decrease the chances of litigation in their programs (Schneider et al., 2008; Stier et al., 2008; Young, Fields, & Powell, 2007). With many institutions adopting formal risk management plans in their campus recreation programs, several specific areas have been targeted, including but not limited to: the supervision of activities and facilities, inspections, written policies and/or procedures, emergency plans, staff and/or participant certifications and training, use of waivers and/or consent forms, and proper

documentation. In the current study, many club sport programs were addressing several such elements of risk management.

For example, the data revealed that 100% of club sport program respondents reported requiring some certification(s) for the following: professional staff, graduate assistants, student employees, and participants. A majority (76.3%) of club sport programs provided certification courses (i.e., CPR, AED, First Aid) in-house for employees, coaches, and participants (Table 4-3). Club sport program professional employees were the most commonly certified group within club sport programs, with 74.4% of them holding CPR certification, 68.6% holding First Aid certification, and 67.3% holding AED certification. Club sport program student employees and graduate assistants were the two next most certified groups. Certification requirements for coaches and participants were not as common, as no certifications were required for 42.3% of coaches and 58.3% of participants. Club sport program participants were reported as having the lowest overall numbers of required certifications as only 16.0% of the respondents required CPR certification for participants, 12.2% required First Aid certification, and 12.2% required AED certification. Regardless of who provides certification training, as well as who is certified, (i.e., professional staff, graduate assistants, student employees, coaches, or participants), in terms of reducing risk, it is important that someone who has the relevant up-to-date certifications is present at sport club activities when physical activity is taking place (Menaker & Connaughton, 2009; Spengler, Connaughton, & Pittman, 2006).

A large number (87.8%) of club sport administrators indicated that their risk management plans included documenting all physical injuries that occurred, and 53.8%

reported that a First Aid kit was required at all club sport activities. However, only 10.3% of club sport programs required physical (medical) examinations, and 23.7% required club sport program participants to complete a health screening/history form prior to participation. While recent studies (Stier et al., 2008; Young, Fields, & Powell, 2007) suggest that general risk management plans in campus recreation programs continue to become more comprehensive and prevalent, the current study suggests some gaps remain. For example, approximately 10% of club sport programs were not documenting all physical injuries, and over 43% did not require a First Aid kit at all club sport activities. Additionally, only 21.2% of club sport programs required participants to complete a health screening/history form prior to participation (Table 4-2). In an effort to reduce liability and to demonstrate that certain procedures were conducted, the documentation of all injuries is important (Spengler, Connaughton, & Pittman, 2006). Greater efforts should be made by club sport programs to document all injuries. Additionally, a First Aid kit should be present at club sport activities when physical activity is taking place (Spengler, Connaughton, & Pittman, 2006).

Risk Management Practices and Policies Associated with Disease Control and Prevention in Club Sport Programs

The results of this study suggest that policies and practices related to disease control and prevention within club sports programs may not have been as extensively addressed as other areas of general risk management. For example, the majority (57.7%) of club sport administrators indicated that they did not have a written risk management plan that specifically addressed disease control and prevention, while 53.2% also reported that they did not have a written risk management plan that addressed bloodborne pathogens. However, 53.3% of all respondents indicated that

they trained employees in universal precautions that could be implemented when handling blood or OPIM, and 56.1% of all respondents had written policies and procedures addressing handling an incident involving blood.

Without the proper management of communicable disease and bloodborne pathogen risk in sport, club sport program employees, participants, and organizations may be exposed to an increased risk of injury, death, and liability. Injuries and bleeding are not uncommon to sport and present a favorable environment for bloodborne pathogen exposure and disease transmission. Over the past two decades, bloodborne pathogen exposure and risk in sport has primarily focused on the Human Immunodeficiency Virus (HIV) and Hepatitis B Virus (HBV). These viruses have the capability of not only being potentially lethal to the carrier, but they can also be transmitted through blood or other infectious material to an unsuspecting sport participant (Zeigler, 1997).

In addition to HIV and HBV, other serious diseases that have the potential to infect sport participants also exist. Andrews, Howard-Shaugnessy, and Adams (2007) noted an alarming increase in the prevalence of MRSA infections at all levels of sport (including high-school, college and professional), as well as provided recommendations to reduce such risk. Among a number of guidelines and recommendations, the authors stated that, at the very least, athletes should be aware of the “potential lethality of the disease” (p. 19) and the presence of CA-MRSA in sport, as well as be able to identify and report any suspicious skin sore, lesion, or boil for immediate and proactive treatment (Andrews et al., 2007). Andrews et al., (2007) stated, "Left undetected, CA-MRSA can be a deadly bacterial infection. Educating sport and dance participants on

detecting an infection early and on appropriate treatment are all integral components to avoiding a CA-MRSA outbreak...it is imperative that appropriate preventive measures be implemented to ensure safety". (p. 23)

Aside from the risks associated with bloodborne pathogens such as HIV, HBV, and MRSA in the sport environment, communicable diseases including the H1N1 virus can also pose a serious threat. In the spring of 2009, the H1N1 virus spread rapidly across the US, resulting in a number of school closures (Conatser & Ledingham, 2010). Although the majority of the respondents in this study reported that they had never canceled or postponed an event due to a communicable disease (84.0%) or bloodborne pathogen-related (86.5%) incident, the potential severity of such an incident, warrants a high degree of proactive attention. Similarly, a majority of club sport programs indicated they had never closed a facility due to a communicable disease (76.3%) incident or a bloodborne pathogen-related incident (75.6%). However, not all club sport programs were free from such incidences, with 20.5% reporting that they had communicable disease or bloodborne pathogen-related closures or cancelations (Table 4-5).

In the wake of the chaos that surfaced from the H1N1 pandemic, the current guidelines (and/or lack thereof) for decision-making regarding athlete participation, facility closures, and event cancellations have come into question. Outside of this study, we know that several local and statewide athletic competitions were canceled in an attempt to limit the outbreak and extent of the disease through person-to-person contact and interactions. Dismissing athletes or participants from activity is a crucial initial step in separating infected individuals from those who are not yet ill (Koester, 2011). Information and guidelines summarized from the CDC (2008) state that, "The decision

to dismiss students and athletes...should balance the goal of reducing the number of people who become seriously ill or die with the goal of minimizing social disruption and safety risks..." (p. 29). The CDC's statements also emphasize that decisions within the sport environment (pertaining to communicable disease cancellations, closures, and participant separation), depend upon multiple variables.

Additional recommendations have also emphasized that decisions related to bloodborne pathogen and communicable disease cancellations, closures, and participant separation should only be made, and policies and procedures enacted, after consultation with state and/or local public health officials (Koester, 2011). However, in this current study, only 30.4% of the respondents reported that they consulted a health/medical professional, while 27.6% of them consulted professional organizations, regarding communicable disease and bloodborne pathogen risk management recommendations (Table 4-9). Risk management policies and procedures associated with disease control and prevention can be somewhat complex, comprehensive, and evolve frequently. Therefore, it is prudent for club sport administrators to consult health/medical professionals and/or professional organizations when developing or revising such risk management policies and procedures (Ross & Young 1995; Zeigler, 1997).

Perceived Awareness and Importance of Communicable Disease and Bloodborne Pathogen Risks

Respondents indicated that they were familiar with the risk of communicable disease and bloodborne pathogens (MRSA, HIV, HBV, Swine Flu, etc.) in the sport environment, with 84.0% ($M=5.12$; $SD=1.107$) reporting that they were familiar with the risk. A total of 62.6% ($M=4.45$; $SD=1.152$) of respondents also rated the risk associated

with communicable disease and bloodborne pathogens within their club sport programs as risky. Furthermore, 94.9% ($M=5.97$; $SD=0.846$) of respondents agreed that there was an increased risk of transmitting communicable disease and bloodborne pathogens in heavy contact sports such as rugby, wrestling, and boxing, while 69.3% ($M=4.96$; $SD=1.314$) indicated that they agreed that there was an increased risk of transmitting communicable diseases and bloodborne pathogens in sports that require the wearing of significant amounts of protective equipment such as fencing, lacrosse, and ice hockey (Table 4-7).

The data suggest the respondents' perceived awareness and importance of communicable disease and bloodborne pathogen risk in the club sport environment as both risky and high, respectively, and therefore should warrant the adoption and practice of relevant risk management policies. Exposure to communicable diseases and bloodborne pathogens poses a threat to sport participants and staff members. The CDC identified several modes in which bacteria, bloodborne pathogens, and other communicable diseases may be spread. Such methods of transmission include, but are not limited to: "(1) crowding, (2) contact, (3) cuts and abrasions, (4) contamination of items and surfaces, and (5) lack of cleanliness and proper sanitation" (CDC, 2008, Why MRSA is Spread Among Athletes, ¶ 2). Some sports, especially where there is close person-to-person contact (e.g., boxing, rugby, wrestling), or the wearing of significant amounts of protective equipment (e.g., hockey, football, lacrosse, fencing), have an increased risk of transmitting blood, infection, or OPIM among participants (Menaker & Connaughton, 2009).

As the NATA (2008) noted, “due to the nature of competitive sports...there is an elevated risk of infectious disease being spread by skin-to-skin contact and contaminated equipment shared by athletes” (Curtis, 2008, p. 45). The NATA also recently reported that skin infections, in particular, lead to more than half of all outbreaks of all communicable diseases in physical activity and the sport environment (Kravitz, 2011). It is, therefore, important for club sport administrators to develop a risk management plan that addresses communicable diseases and bloodborne pathogens (Zeigler, 1997).

Comparisons between Perceived Awareness and Importance of the Risk with Corresponding Risk Management Policies and Practices

In the current study, chi-square and correlation analyses were utilized to compare awareness and importance of communicable disease and bloodborne pathogen risk to relevant risk management policies and procedures. Table 4-10 through Table 4-19. Of the nine chi-square analyses that were performed, and the single bivariate correlation comparing awareness and importance against corresponding policies and procedures (practice), six (60%) were significant ($p < 0.05$). Although the perceived awareness and importance of the risk associated with communicable disease and bloodborne pathogens in club sport programs may be moderately high based on the results of this study, the corresponding levels of risk management policies and practices associated with disease control and prevention appear to be somewhat lacking. Risk management policies and procedures for reducing communicable disease and bloodborne pathogen risks in club sport programs should include, but not be limited to: (1) staff/participant education; (2) prompt recognition of athletes and participants with infections or exposure to blood and/or OPIM; (3) First Aid and infection control procedures to prevent

continued exposure to infection or blood; and (4) as well as adherence to general guidelines, recommendations, and hygienic principles not only for staff members and athletes/participants, but also in regard to athletic clothing, equipment, and facility areas (CDC, 2008).

Risk Management Policies and Procedures Addressing Communicable Disease and Bloodborne Pathogens in Club Sport Programs

Among the statistically significant chi square analyses ($p < 0.05$), the majority (57.7%) of club sport program respondents reported that they did not have a risk management plan that addressed disease control and prevention, and only 35.9% indicated that their club sport program had a written exposure control plan that addressed bloodborne pathogens. While the data suggests that the respondents overall are familiar with the risks and perceive the risk to be somewhat risky, only 33.3% of the club sport programs had a risk management plan that addressed such issues.

As Menaker and Connaughton (2009) state “Coaches, trainers, physical educators, sport and fitness program managers, and others involved in physical activity programs should be encouraged to follow published statements and guidelines in an effort to provide a reasonably safe environment and reduce the risk of infection” (p. 3). Club sport program employees and athletes/participants should receive education and training on bloodborne pathogens and OPIM, and the measures that can be used to prevent and reduce their risk. It is also recommended for staff members to report all communicable disease outbreaks and known infections, not only to program administrators, but also to local or state health professionals (Menaker & Connaughton, 2009).

All individuals, whether a staff member or athlete/participant, should take special care to avoid contact with any blood or OPIM. Before an athlete/participant partakes in practice or competition, all open skin wounds and lesions (cuts, scrapes, etc.) should be covered with a fixed dressing that does not allow for easy transmission to or from another athlete (Zeigler, 1997). Skin-to-skin, physical contact with individuals who have cuts or wounds, even if bandaged, should be avoided. Athletes with active bleeding should be removed from participation as soon as possible and allowed to return only when the bleeding has stopped and the wound properly dressed and bandaged (Romano, Lu, & Holtom, 2006). Protective First Aid equipment, including disposable gloves and antiseptic agents, should be kept in properly stocked First Aid kits that are readily available for use. Chlorine bleach (one part bleach and 10 parts water), or other approved agents, should be utilized for disinfecting all potentially contaminated surfaces and equipment. When wearing disposable gloves, special care should be taken to not contaminate other surfaces, objects, or individuals. Immediately after exposure to blood or other potentially infectious materials, individuals should wash their hands and all exposed body surfaces with anti-germicide and disinfecting agents, or soap and warm water (Zeigler, 1997). Additionally, athletes/participants should also be strongly encouraged to shower immediately after physical activity. As aforementioned, medical professionals should also be notified if an exposure to infectious material occurs, or if a known infection gets worse, leads to fever, or gives any reason for further serious concern (Rogers, 2008). It is emphasized that infected individuals are aware, understand, and adhere to healthcare professionals' guidelines and recommendations

pertaining to communicable disease and bloodborne pathogen exposure control and prevention (CDC, 2008).

Club sport administrators, staff, coaches, and students/participants should be aware of the risk management policies and procedures associated with communicable disease and bloodborne pathogens. Those responsible for providing First Aid and/or handling blood or other potentially infectious material should receive relevant training and have knowledge to the relevant risk management policies. In an effort to reduce risks and potential liability, a club sport program and its administrators, staff, coaches, and participants should be aware and trained in this important area (Ross & Young, 1995).

Practical Implications for Reducing Communicable Disease and Bloodborne Pathogen Risks Associated with Equipment and Field/Facility Areas in Club Sport Programs

The comparison of the perceived importance with risk management practices related to potentially contaminated equipment (especially in sports that require the wearing of significant amounts of protective equipment such as fencing, lacrosse, and ice hockey) was not statistically significant, suggesting that perception and practice are independent. This raises concern, when considering that the perceived awareness ($M=4.96$; $SD=1.314$) and importance ($M=5.39$; $SD=1.044$) of such risks were moderately high. Respondents from 62.8% of club sport programs reported not having written policies and procedures regarding equipment contaminated with blood or OPIM. Similarly, 48.1% reported not having written policies and procedures regarding field/facility areas contaminated with blood or OPIM.

Sport uniforms, equipment, and facility areas (i.e., locker rooms, showers, field areas, aquatic areas, etc.) should be inspected for blood or OPIM and appropriately

cleaned with a proper disinfectant (Menaker & Connaughton, 2009). Facility areas and fitness equipment (mats, weight training benches/machines, cardiovascular machines, barbells, etc.) should be cleaned and sanitized on a regular basis. Fitness mats, especially those used in wrestling and yoga, are common areas for the presence of MRSA bacteria. Such pieces of equipment, in particular, should be cleaned and sanitized after sessions, practices, or competitions (Menaker & Connaughton, 2009; Rogers, 2008). A uniform or protective athletic equipment that has blood present on it should be removed immediately and bagged separately (Zeigler, 1997). Athletic clothing and protective gear, including but not limited to knee pads, facemasks, goalie equipment, helmets, etc., should be cleaned and disinfected as well. The sharing of towels, razors, and athletic gear should be avoided, and disposable towels should be provided and utilized during games and practices to avoid the opportunity for disease transmission and/or the harboring of OPIM (Romano, Lu, & Holtom, 2006). As previously emphasized, written risk management policies and procedures regarding equipment and field/facility areas contaminated with blood or OPIM are important for decreasing the risk of disease transmission.

Consulting Professional Organizations and Health/Medical Professionals Regarding Communicable Disease and Bloodborne Pathogen Risks in Club Sport Programs

The comparison between the perceived importance of club sport programs consulting a health/medical professional concerning communicable disease and bloodborne pathogen policies and practices was also not significant, raising concerns on how to translate the heightened awareness into proper action. Respondents (54.8%) indicated that they did not consult a health/medical professional regarding communicable disease and bloodborne pathogen policies and procedures. Additionally,

55.1% did not consult professional organizations (i.e., ACSM, NASM, NATA, NCAA, OSHA, environmental health and safety department, etc.) regarding communicable disease and bloodborne pathogens exposure and control within their programs.

As previously mentioned, “the OSHA bloodborne pathogen standard (Part 1910.1030 of Title 29) covers all employees who could reasonably anticipate contact with blood or other infectious materials as a results of performing their job duties” (Ross & Young, 1995, p. 12). This includes club sport program employees who are tasked with handling situations (e.g., providing First Aid) involving exposure to blood and/or other potentially infectious materials. The bloodborne pathogen standard requires that all eligible employees receive proper training and education pertaining to preventing contamination and transmission of bloodborne pathogens and OPIM. The standard mandates the implementation of methods regarding control and prevention in the event of a bloodborne pathogen or OPIM incident which include: (1) the practice of “universal precautions” requiring employees to assume all blood and/or other potentially infectious material as hazardous, (2) carrying out “engineering controls” to reduce employee exposure including practices such as utilization of protective gloves when responding to a bloodborne pathogen or infectious material incident, and use of CPR microshields or pockets facemasks to prevent direct mouth-to-mouth contact, as well as (3) developing a written exposure control plan (ECP), identifying and outlining the tasks and procedures that should be carried out when exposure to bloodborne pathogens or OPIM occurs. Additionally, OSHA’s bloodborne pathogen standard provides opportunity for employees to receive the HBV vaccination and post-exposure follow-up. It also includes extensive documentation and record-keeping (Ross & Young, 1995). The OSHA

bloodborne pathogen standard is comprehensive and somewhat complex. It would be prudent for club sport administrators to consult with their local/regional OSHA office and/or other health/medical professionals/organizations when developing related risk management policies and practices.

The health and fitness industry has been made aware, and strongly encouraged, to comply with OSHA standards for many years. The risk of coming in contact with blood or OPIM has stirred many fitness facilities and sport-related programs to adopt OSHA standards and related risk management practices to protect employees and avoid legal transgressions (Fried, 2009). However, despite the OSHA bloodborne pathogen standard providing detailed guidelines for the protection of employees, aspects of the OSHA standard do not cover athletes/participants or other non-employees (e.g., club sport officers, volunteers; Menaker & Connaughton, 2009). Aside from the OSHA bloodborne pathogen standard, athletes/participants and non-employees of campus recreation club sport programs should be provided with the appropriate education and training, as well as made aware of the risk management policies and procedures associated with reducing the risk of bloodborne pathogens and OPIM in the sport environment.

The National Collegiate Athletic Association (2008), in addition to their *NCAA Guideline 2H: Bloodborne Pathogens and Intercollegiate Athletics*, has created educational posters detailing information about the risks associated with bloodborne pathogens in sport. Individuals working in physical activity-related programs should consider distributing information on communicable disease and bloodborne pathogens in the sport environment to aid in educating and informing others (Zeigler, 1997).

Furthermore, it is collectively recognized by professional organizations, including but not limited to the ACSM, American Medical Society for Sports Medicine, and NATA, that knowledge and awareness pertaining to the recommended guidelines for preventing exposure to communicable disease and bloodborne pathogens in sport remains “the most powerful weapon” (Zeigler, 1997, p. 44). In an effort to implement the most up-to-date standards and to meet the highest level of care, it is wise for club sport program administrators to consult with health/medical professionals and/or professional organizations regarding risk management policies and practices pertaining to communicable diseases and bloodborne pathogens (Menaker & Connaughton, 2009).

Risk management in campus recreation club sport programs should address communicable disease and bloodborne pathogens, including informing and educating staff members and athletes/participants about the potential risks that can ensue, as well as steps that can be taken in order to prevent and reduce such risk occurrences (Menaker & Connaughton, 2009). By adhering to such policies and procedures, the risk of communicable disease and bloodborne pathogen transmission in sport can be reduced (Ziegler, 1997).

Reducing Liability Associated with Communicable Disease and Bloodborne Pathogens in Sport

It is important to manage risks associated with communicable disease and bloodborne pathogens as a means of reducing liability. As Menaker and Connaughton (2009) stated, “an infection (associated with communicable disease and bloodborne pathogens) could be considered a foreseeable risk in an athletic, physical education, or fitness setting” (p. 1). Club sport administrators and their staff should be aware of the various potential risks that could result in a harmful incident, financial loss, and/or an

overall negative image of their department and institution (Schneider et al., 2008). The failure to properly manage risk in this area could lead to legal action and liability.

For example, in 2009, former National Football League (NFL) receiver, Joe Jurevicius sued his team (Cleveland Browns) and the NFL for a staph infection (MRSA) he contracted. Jurevicius underwent knee surgery in January 2008 and contracted the staph infection shortly thereafter. He claimed that the Browns' were negligent in the failure to properly clean the team training facility, and that team doctors failed to warn him that the therapy equipment was not always properly sanitized. Jurevicius was released as a player from the Browns and as a result of the staph infection. His attorneys reported that he 'may never be able to play professional football again' (ESPN, 2009b).

The U.S. District Judge in the case, Judge Solomon Oliver, Jr., ruled that the following six claims made by Jurevicius were not preempted by the NFL Collective Bargaining Agreement, and sent them to Cuyahoga County Common Pleas Court: "(1) negligent failure to warn players regarding potentially hazardous conditions at the training facility, (2) negligent failure to undertake proper precautions to remove and/or prevent the spread of staph, (3) negligent misrepresentation regarding whether prior incidents of staph infection had been contracted at the training facility, (4) fraudulent misrepresentation that proper procedures were in place to prevent staph infection at the training facility, (5) intentional exposure of employees to a dangerous condition about which the employer was aware, and (6) deliberate misrepresentation of the presence of a toxic or hazardous substance as creating a rebuttable presumption of intent". (ESPN, 2009b)

Ultimately, the case was settled before going to trial. The Browns' attorney, Fred Nance, said the terms of the settlement were confidential; however, it was reported that the lawsuit asked for damages totaling more than \$25,000, unspecified punitive damages, attorney and expert fees, and related costs. An infectious disease specialist provided an affidavit, which revealed that Jurevicius' staph infection was due to circumstances alleged in the lawsuit. Following the lawsuit, a NFL physician surveyed 32 clubs and revealed 33 MRSA staph infections occurred league-wide from 2006-08. The survey also revealed that at least six Browns players had some form of staph infection (ESPN, 2009b).

In another case, a former college football player sued Iona College over an antibiotic-resistant staph infection that nearly cost him his leg in September 2005. Nick Zaffarese accused team trainers of initially ignoring the severity of his MRSA infection. He alleged that the team's locker room was an unsanitary environment in which players shared towels and equipment. It was reported that the case settled for approximately \$250,000. Shortly after the settlement, Iona College disinfected their weight room, as well as implemented hygiene education, after 10 members of another athletic team were diagnosed with MRSA as well (ESPN, 2007).

Additionally, in 2007, the Minnesota State High School league suspended a high school wrestler who broke out with the herpes virus for eight days during the season. Athletes from 10 different schools within the league developed skin lesions. When the outbreak was eventually controlled, 40 wrestlers from 16 different schools had been infected (Popke, 2011). More recently, in 2010, administrators and coaches at North Central High School in Indianapolis were accused of failing to properly and thoroughly

sanitize wrestling mats, as well as not taking action to restrict a MRSA-infected wrestler from participation. As a result, a 17-year-old high school wrestler was hospitalized with a severe staph infection and a 104.5-degree fever after skin-to-skin contact with an infected wrestler. Physicians who treated the 17-year-old wrestler stated that they were 99% sure that he had contracted the infection directly from the skin-to-skin contact with his sparring partner and unclean wrestling mats.

Failure to properly manage the risk associated with communicable disease and bloodborne pathogens in sport, can lead to severe infections, illness, death, and subsequent legal claims (Menaker & Connaughton, 2009). Therefore, it would be prudent for club sport program administrators to develop and/or revise risk management plans aimed at reducing such risks.

CHAPTER 6 LIMITATIONS AND FUTURE RESEARCH

Limitations

The study current study had several limitations that must be noted. An email invitation and link to the survey instrument was sent to the population through the Qualtrics™ survey database. Email addresses of the intended survey population were entered into the database prior to the survey being launched. The email addresses of 522 club sport program directors were obtained from the NIRSA 2011 recreational sports directory. Due to possible employee turnover and typographical errors, not all of the names and email addresses of the intended population may have been current and/or correct. Of the 522 email addresses entered into the Qualtrics™ survey database for the initial survey distribution, 24 emails were faulty and produced a permanent error, which resulted in unsuccessful survey distribution. This reduced the intended population to 498 club sport program administrators. Of the 498 club sport administrators who received the survey, 156 submitted complete responses, resulting in a 31.3% response rate. With current and correct names and email addresses of all club sport program administrators, a higher response rate may have obtainable.

It was expected that club sport administrators would be aware of the general risk management survey questions, and would be able to answer them with little to no confusion. However, their specific knowledge of communicable disease and bloodborne pathogen exposure and control, as an aspect of risk management, may not have been as refined. Although communicable disease and bloodborne pathogen exposure and control can be somewhat complex in nature, questions in this section of the survey were written for clarity and understanding to limit potential confusion. Definitions for particular

terms and diseases were provided in order to limit participant's confusion or not answering a question. Some respondents, however, may still not have been fully aware of certain terminology and/or their program's specific risk management policies and procedures. For example, respondents may not have fully understood the differences regarding an exposure control plan versus an overall risk management plan.

Another limitation to this study was the possible increase in non-responders due to the potential concern that legal-related information regarding their respective club sport programs may not remain anonymous. Although this was addressed in the emails by stating that all data would be kept anonymous, no individual respondent and/or school would be identified, and all results would be reported as group data, it is presumed that some respondents may have still been deterred from participating in the survey due to this factor.

Future Research Suggestions

This study was exploratory in nature. Future studies may adopt more advanced analytical procedures such as confirmatory factor analysis and structural equation modeling to further explore theoretical relationships among the research variables (i.e., awareness, perception, behavioral intentions, and risk management practices). This study was limited to administrators of NIRSA club sport programs in the United States. Although similarities exist among programs in the U.S. and/or those that are institutional members of the NIRSA, differences may exist in programs outside of the U.S. or within programs that are not institutional members of the NIRSA. Therefore, the generalizability of the findings of this study should be limited to club sport programs in the U.S. that are institutional members of the NIRSA. Future studies could include club

sport programs that are outside of the U.S. and/or those that are not institutional members of the NIRSA.

Despite club sport programs falling under their respective university's jurisdiction, they (as primarily student-run organizations) typically operate with a great deal of autonomy. This unique aspect of club sport programs often results in professional staff members (e.g., supervisors and coordinators) taking a secondary role (although they assist the clubs in planning, scheduling, and organizing) and therefore, a significant amount of responsibility is held by the students. It is the students who are often the first responders when injuries and incidents arise and not certified athletic trainers, team physicians, or professional staff (campus recreation employees). Future research could include studying students' (club sport program participants) perceptions and knowledge of the risk associated with communicable disease and bloodborne pathogens in the club sport environment.

The current study could also be replicated in different program areas of campus recreation (e.g., fitness centers, intramurals, aquatic programs, outdoor pursuits, etc.). Surveying students or participants may provide unique results, as participants typically approach club sport programs in a different manner from administrators and staff members. Participants also often carry out many essential duties of their respective clubs, and usually act as first-responders in the event of a medical incident. Participants' perceived awareness and importance of the risks associated with communicable disease and bloodborne pathogens, as well as corresponding risk management policies and procedures, may result in different relationships.

The current study could have also asked additional questions of the club sport administrators. For example, what professional organizations did respondents specifically belong to? Do respondents believe it is important for NIRSA to address disease control and prevention in club sport programs? Additional data would lead to further analyses.

Furthermore, fitness centers would also be an interesting area of investigation. Fitness centers often utilize more shared equipment and facility areas, and may have increased areas of contamination. Fitness centers may also have higher user rates, or a more diverse population, from that examined in the current study.

APPENDIX A INFORMED CONSENT

Please read this consent document carefully before you decide to participate in this study.

Protocol Title:

Awareness, perception, and risk management practices related to disease control and prevention in university club sport programs

Introduction and Instructions:

My name is Mary Waechter and I am a sport management graduate student in the department of Tourism, Recreation and Sport Management at the University of Florida. I am working on my master's thesis project under the guidance of Drs. Dan Connaughton and J.O. Spengler, as well as assistance from the University of Florida's Club Sport Director, Mr. Eric Ascher.

The purpose of this survey focuses on bloodborne pathogen and communicable disease prevention policies, practices, and risk management procedures within campus recreation club sport programs. This is a national study, distributed to all NIRSA club sport directors in the United States. Information gathered from this survey will help to determine the scope and nature of campus recreation club sports programs' risk management practices regarding disease control and prevention, how campus recreation club sport directors perceive communicable diseases as a risk, and whether there is an association between risk perception and risk management practices.

You must be at least 18-years-old to complete this survey and your participation is voluntary. You may withdraw your consent at any time without penalty, and you do not have to answer any questions you do not wish to answer. There is no compensation to you for participating in this study. Participating involves no anticipated risks and your answers will remain confidential and anonymous. No individual or institution will be identified, and no email or IP addresses will be saved with your responses.

Please answer the following items based upon your perceptions, viewpoints, and experiences within your club sport program. Click on the electronic arrow below each question to navigate throughout the survey. When you have completed the survey, please ensure that you have successfully clicked the submit button as prompted on your computer screen. Note that there is no time limit to this survey; however, once you have completed the online survey you will not be able to return to it again.

Thank you for taking the time to participate in this important survey. By checking this box, you agree to participate in this survey research project.

APPENDIX B
SURVEY INSTRUMENT

I. CLUB SPORT DEMOGRAPHICS

1. Please indicate your gender:

_____ Male _____ Female

2. Is your institution:

_____ Public _____ Private

3. What is the approximate number of students enrolled in your institution?
(Please indicate a number in the space provided.)

4. How many full-time professionals (including yourself) are employed within the club sports program? (Please indicate a number in the space provided.)

5. How many registered club sports are currently with your program?
(Please indicate a number in the space provided.)

6. Did you take any courses related to legal issues while earning your academic degree?

_____ YES _____ NO

6a. To what degree do you perceive the importance of taking courses related to legal issues?

Unimportant

1	2	3	4	5	6	7
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 Very Important

7. Did you take any courses related to risk management while earning your academic degree?

_____ YES _____ NO

7a. To what degree do you perceive the importance of taking courses related to risk management?

Unimportant

1	2	3	4	5	6	7
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 Very Important

8. Do you hold current certification in any of the following?
(Please check (√) all that apply.)

- Automatic External Defibrillator (AED)
- Bloodborne Pathogen Training (BBP)
- Cardiopulmonary Resuscitation (CPR)
- First Aid

8a. To what degree do you perceive the importance of professional club sport staff holding current certification in Automatic External Defibrillation?

Unimportant

1	2	3	4	5	6	7
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 Very Important

8b. To what degree do you perceive the importance of professional club sport staff holding current certification in Bloodborne Pathogen Training (BBP)?

Unimportant

1	2	3	4	5	6	7
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 Very Important

8c. To what degree do you perceive the importance of professional club sport staff holding current certification in Cardiopulmonary Resuscitation (CPR)?

Unimportant

1	2	3	4	5	6	7
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 Very Important

8d. To what degree do you perceive the importance of professional club sport staff holding current certification in First Aid?

Unimportant

1	2	3	4	5	6	7
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 Very Important

9. Has your club sports program ever canceled or postponed an event due to a communicable disease -related incident?

YES NO Unsure

9a. If yes, how many times has this occurred in the past 24-months? _____

10. Has your club sports program ever canceled or postponed an event due to a bloodborne pathogen -related incident?

YES NO Unsure

10a. If yes, how many times has this occurred in the past 24-months? _____

11. Has your club sports program ever closed a facility or portion of a facility due to a communicable disease-related incident?

_____ YES _____NO _____Unsure

11a. If yes, how many times has this occurred in the past 24-months? _____

12. Has your club sports program ever closed a facility or portion of a facility due to a bloodborne pathogen-related incident?

_____ YES _____NO _____Unsure

12a. If yes, how many times has this occurred in the past 24-months? _____

II. KNOWLEDGE & RISK PERCEPTION ASSOCIATED WITH DISEASE CONTROL AND PREVENTION

1. How familiar are you with the risks associated with communicable diseases and bloodborne pathogens (MRSA, HIV, HBV, Swine Flu, etc.) in the sport environment?

Unfamiliar

1	2	3	4	5	6	7
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 Very Familiar

2. How would you rate the risk associated with communicable diseases/bloodborne pathogens within your club sport program?

No Risk

1	2	3	4	5	6	7
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 Extreme Risk

3. How would you rate the importance of identifying which athletes/clubs are most at-risk for contracting and transmitting communicable diseases and bloodborne pathogens?

Unimportant

1	2	3	4	5	6	7
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 Very Important

4. How would you rate the importance of having written policies and procedures regarding addressing communicable diseases/ bloodborne pathogens in your club sports program?

Unimportant

1	2	3	4	5	6	7
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 Very Important

5. I feel that there is an increased risk of transmitting bloodborne pathogens and communicable diseases in heavy contact sports such as rugby, wrestling, and boxing?

Strongly Disagree

1	2	3	4	5	6	7
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 Strongly Agree

6. I feel that there is an increased risk of transmitting bloodborne pathogens and communicable diseases in sports that require the wearing of significant amounts of protective equipment such as fencing, lacrosse, and ice hockey?

Strongly Disagree

1	2	3	4	5	6	7
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 Strongly Agree

III. RISK MANAGEMENT PRACTICES ASSOCIATED WITH DISEASE CONTROL AND PREVENTION

1. Does your club sports program have a written risk management plan that addresses disease control and prevention?

_____ YES _____NO _____Unsure

1a. To what degree do you perceive the importance of your club sports program having a written risk management plan that addresses disease control and prevention?

Unimportant

1	2	3	4	5	6	7
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 Very Important

2. Does your club sports program have a written exposure control plan that addresses bloodborne pathogens?

_____ YES _____NO _____Unsure

2a. To what degree do you perceive the importance of your club sports program having a written exposure control plan that addresses bloodborne pathogens?

Unimportant

1	2	3	4	5	6	7
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 Very Important

3. Are physical (medical) examinations required of all club sports participants?

_____ YES _____NO _____Unsure

3a. To what degree do you perceive the importance of your club sports program requiring all club sport participants to have physical (medical) examinations?

Unimportant

1	2	3	4	5	6	7
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 Very Important

4. Do you require the club sports program participants to complete a health screening/history form prior to participation?

_____ YES _____NO _____Unsure

4a. To what degree do you perceive the importance of your club sports program requiring participants to complete a health screening/history form prior to participation ?

Unimportant

1	2	3	4	5	6	7
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 Very Important

5. What certifications do you require of your club sports professional employees?
(Please check (√) all that apply.)

- Attend a Departmental Orientation Certification
- Automated External Defibrillator (AED)
- Bloodborne Pathogen
- CPR
- First Aid
- No certifications required
- Sport Specific Certification
- Other, please list _____

6. What certifications do you require of your club sports graduate assistants?
(Please check (√) all that apply.)

- Attend a Departmental Orientation Certification
- Automated External Defibrillator (AED)
- Bloodborne Pathogen
- CPR
- First Aid
- No certifications required
- Sport Specific Certification
- Other, please list _____

7. What certifications do you require of your club sports student employees?
(Please check (√) all that apply.)

- Attend a Departmental Orientation Certification
- Automated External Defibrillator (AED)
- Bloodborne Pathogen
- CPR
- First Aid
- No certifications required
- Sport Specific Certification
- Other, please list _____

8. What certifications do you require of your club sports coaches?
(Please check (√) all that apply.)

- Attend a Departmental Orientation Certification
- Automated External Defibrillator (AED)
- Bloodborne Pathogen
- CPR
- First Aid
- No certifications required
- Sport Specific Certification

_____ Other, please list _____

9. What certifications do you require of your club sports participants?
(Please check (√) all that apply.)

- _____ Attend a Departmental Orientation Certification
- _____ Automated External Defibrillator (AED)
- _____ Bloodborne Pathogen
- _____ CPR
- _____ First Aid
- _____ No certifications required
- _____ Sport Specific Certification
- _____ Other, please list _____

10. Does your club sport program provide training for the above-mentioned certifications to employees, club sport coaches, and participants?

_____ YES _____ NO _____ Unsure

10a. To what degree do you perceive the importance of your club sport program providing training for the above-mentioned certifications to employees, club sport coaches, and participants?

Unimportant

1	2	3	4	5	6	7
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 Very Important

11. Are all club sports organizations within your program supplied with a First Aid kit?

_____ YES _____ NO

11a. To what degree do you perceive the importance of your club sport program supplying all club sport organizations with a First Aid kit?

Unimportant

1	2	3	4	5	6	7
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 Very Important

12. Does your program require a First Aid kit at all club sport activities?

_____ YES _____ NO _____ Unsure

12a. To what degree do you perceive the importance of your club sport program requiring a First Aid kit at all club sport activities?

Unimportant

1	2	3	4	5	6	7
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 Very Important

13. Does your club sports program train employees in universal precautions that can be implemented in the handling of any blood or body fluids should an injury occur during practice or competition?

_____ YES _____ NO _____ Unsure

13a. To what degree do you perceive the importance of your club sport program training employees in universal precautions that can be implemented in the handling of any blood or body fluids should an injury occur during practice or competition?

Unimportant

1	2	3	4	5	6	7
---	---	---	---	---	---	---

 Very Important

14. Does your club sport program offer the following employees Hepatitis B vaccination?

Professional Employees _____ YES _____ NO
Graduate Assistants _____ YES _____ NO
Student Employees _____ YES _____ NO

14a. Do you think it is important that club sport program employees receive the Hepatitis B vaccination?

Unimportant

1	2	3	4	5	6	7
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 Very Important

15. Does your club sport program have written policies and procedures regarding equipment contaminated with blood or infectious material?

_____ YES _____ NO _____ Unsure

15a. To what degree do you perceive the importance of your club sport program having written policies and procedures regarding equipment contaminated with blood or infectious material?

Unimportant

1	2	3	4	5	6	7
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 Very Important

16. Does your club sport program have written policies and procedures regarding fields/facility areas contaminated with blood or infectious material?

_____ YES _____ NO _____ Unsure

16a. To what degree do you perceive the importance of your club sport program having written policies and procedures regarding fields/facility areas contaminated with blood or infectious material?

Unimportant

1	2	3	4	5	6	7
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 Very Important

17. Does your club sport program have written policies and procedures addressing a bleeding incident?

_____ YES _____ NO _____ Unsure

17a. To what degree do you perceive the importance of your club sport program having written policies and procedures addressing a bleeding incident?

Unimportant

1	2	3	4	5	6	7
---	---	---	---	---	---	---

 Very Important

18. Has your club sports program consulted a health/medical professional regarding bloodborne pathogen and communicable disease policies and procedures?

_____ YES _____ NO _____ Unsure

18a. To what degree do you perceive the importance of your club sport program consulting a health/medical professional regarding bloodborne pathogen and communicable disease policies and procedures?

Unimportant

1	2	3	4	5	6	7
---	---	---	---	---	---	---

 Very Important

19. Has your club sports program consulted professional organizations regarding bloodborne pathogen and communicable disease exposure and control?

_____ YES _____ NO _____ Unsure

19a. If yes, please check (✓) which organizations have been consulted for your program.

_____ ACSM (American College of Sports Medicine)

_____ College/Institution-Environmental Health and Safety Department

_____ NASM (National Academy of Sports Medicine)

_____ NATA (National Athletic Trainers' Association)

_____ NCAA (National Collegiate Athletic Association)

_____ OSHA (Occupational Safety and Health Administration)

_____ Other (Please identify) _____

20. Does your club sport program document all physical injuries that occur within your program?

_____ YES _____ NO _____ Unsure

20a. If yes, how long do you keep this documentation?

_____ Year _____ Months

20b. To what degree do you perceive the importance of your club sport program documenting all physical injuries that occur within your program?

Unimportant

1	2	3	4	5	6	7
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 Very Important

21. My attitude toward the risk management policies, practices, and procedures currently implemented in my club sport program is:

Bad	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr></table>	1	2	3	4	5	6	7	Good
1	2	3	4	5	6	7			
Unfavorable	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr></table>	1	2	3	4	5	6	7	Favorable
1	2	3	4	5	6	7			
	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr></table>	1	2	3	4	5	6	7	Unsatisfactory Satisfactory
1	2	3	4	5	6	7			
Negative	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr></table>	1	2	3	4	5	6	7	Positive
1	2	3	4	5	6	7			

22. My future intention of managing risk associated with communicable disease in my club sport program is:

1	2	3	4	5	6	7
1	2	3	4	5	6	7
1	2	3	4	5	6	7

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BIOGRAPHICAL SKETCH

Mary Waechter is from Camp Hill, Pennsylvania where she was born and raised. She received her Bachelor of Science in Kinesiology from the Pennsylvania State University in 2009, and moved to Florida to further her education. After interning with the Penn State Club Sport Program for 2 years during her undergraduate career, she pursued a Master of Science degree in Sport Management at the University of Florida and graduated in 2011. Although a Gator graduate, the Nittany Lions are still near and dear to her heart.