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Perceptions Of Athletic Training Services Of Japanese Collegiate Student Athletes

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PERCEPTIONS OF ATHLETIC TRAINING SERVICES OF JAPANESE COLLEGIATE STUDENT
ATHLETES

By

Jun Matsuno

Thesis Approved:



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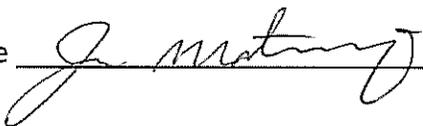
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PERCEPTIONS OF ATHLETIC TRAINING SERVICES OF JAPANESE COLLEGIATE STUDENT
ATHLETES

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Master of Science

Eastern Kentucky University

Richmond, Kentucky

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Submitted to the Faculty of the Graduate School of
Eastern Kentucky University
in partial fulfillment of the requirements
for the degree of
MASTER OF SCIENCE
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DEDICATION

This thesis is dedicated to my parents
Toshiaki and Michiyo Matsuno and my fiancé Kiyō Tanaka
for their unwavering support.

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ABSTRACT

Context: Athletic training is an international field. Athletes' perception or satisfaction of the services is important to improve and maintain the quality of athletic training services. This concept is important inside and outside of the United States. **Objective:** The purpose of this research was to investigate the perception that Japanese collegiate athletes have in regard to athletic training services. **Design:** An online survey was conducted to student athletes in one Japanese University that provides athletic training services to selected intercollegiate sports teams by BOC certified athletic trainers. **Setting:** Japanese collegiate athletic training environment. **Patients or Other Participants:** A total of 285 collegiate student athletes from American football, rugby, women's track and field, and men's basketball teams. **Main Outcome Measure(s):** Athletes' levels of perceptions and satisfactions were assessed using online survey consisted of 35 questions (Matsuno Athletes Perception Survey). **Results:** Differences of mean scores of the components were ranged within a full point except resources and medical coverage components. More than 95 percent of people scored mean score of 3.1 or higher in knowledge, communication, and satisfactions and importance components with mean scores of 5-point Likert Scale. Statistically significant differences were not found with athletes' previous experiences with their high school trainers. **Discussions:** Japanese collegiate student athletes have the same levels of satisfaction of their athletic trainers or the services that their athletic trainers provide as American collegiate student athlete have. This explains that athletes' experiences with their high school trainers do not affect perceptions of certified athletic trainers in current settings.

Key Words: athletic training services, perceptions, satisfactions, Japanese student athletes

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CHAPTER I

INTRODUCTION

General Background

Athletic Trainers (AT) value the contributions sport and exercise make to the health and development of young athletes and recognize the importance of a physically active lifestyle for all (Prentice, 2013). Athletic trainers are recognized as allied health professionals in the United States and play an important role in all levels of athletic programs from youth to professional sports. The AT profession is becoming more recognized internationally. In 2000, the World Federation of Athletic Training and Therapy (WFATT) was created to provide a forum for health care professionals to improve health care for athletes and physically active individuals around the world (Ferrara, 2006). The WFATT is an organization of athletic training organizations and therapy associations in different countries, and one major project is to develop a global athletic training/therapy education model (Ferrara & Ortega, 2010).

There is a significant difference between Japan and the United States models for athletic training (Nakamura, 2005). It is important to recognize the differences of the sports culture in different countries, particularly in Japan (Baba & Ishiyama, 2007). Trainer has been a popular profession in Japan. However, the definition of trainer includes many kinds of professions such as acupuncturist, judo therapist, athletic trainer, and strength and conditioning coach. Ohashi (2003) mentioned that the Japan

Amateur Sports Association (JASA) started an athletic training certification system. Currently, the majority of Japanese public high schools and universities do not employ a BOC certified athletic trainer or trainer in a full-time position. The chiropractor and acupuncturist who work as the “trainers” usually own their clinics and work there. So, most schools do not have any medical personnel providing direct access or services during practices or games.

One of the biggest concerns that Japanese BOC certified athletic trainers have is safety of Japanese high school and collegiate athletes. Among all Japanese medical professions, athletic trainers are a unique profession where the athletic trainer stays with the team (Pilgrim, 2010). The AT works to prevent athletic injuries and provide proper first aid procedures when serious injuries occur, i.e., head and spinal injuries (Yamamoto, 2006). This is very different from other therapists or trainers in the Japanese sports medical field. Also, due to the lack of medical personnel availability at schools and campuses, athletes usually go seek the treatments or rehabilitation for their injuries outside the school. Other trainers, acupuncturists and judo therapists usually wait for athletes to visit their clinic before providing treatment for their injuries. On the other hand, the ATs observe athletes before, during, and after the practice or competition and provide athletes with early recognition, diagnosis, treatment, rehabilitation with direct oversight.

In addition to treatment and rehabilitation, athletic trainers provide athletes social support (Robbins & Rosenfeld, 2001). Compared to other Japanese “trainers”, it is easier for an AT to see the athlete’s emotional and behavioral changes. ATs observe an

athlete's behavior and mood changes while listening to the athlete to discover the cause of the stress to then work on help to find a the treatment strategies. A study showed that certified athletic trainers' social support for injured athletes help athletes believe in their rehabilitation processes (Robbins & Rosenfeld, 2001; Bone & Fry, 2006). The daily interaction of ATs create this unique aspect of medical care.

Currently, in Japan, there are a few universities that hire ATs full-time.

Ritsumeikan was the first Japanese university that hired an AT full-time, and they have tried to implement an American-style athletic training system. There are three ATs working with football, rugby, track and field, and basketball. Ritsumaikan has multiple athletic training rooms and provides their athletes services with evaluation, diagnosis, treatment and rehabilitation on site daily. Many of the athletes there had a Japanese traditional style trainer when they were in high school. The Japanese traditional style trainer is usually an acupuncturist, Judo therapist, or chiropractor. So, there may be some differences in athletes' perceptions of the service between an AT and other trainers or therapists.

Statement of the Problem

The purpose of this research was to determine the perception of Japanese collegiate athletes regarding athletic training services. Since athletic training is a young and developing profession in Japan, current research has not yet investigated Japanese athletes' perception of athletic training services. However, for the ATs and other

athletic therapists, it is important to know how their athletes or patients feel about their services. The independent variable for this research was the athletic training services that Japanese collegiate athletes received from the ATs at Ritsumeikan University. The dependent variable was the athletes' perception of AT services, and the population consisted of Japanese collegiate student-athletes with American Football, Rugby, Women's Basketball, and Men's Basketball team at one Japanese university.

Hypotheses

There were four hypotheses. Hypothesis 1 (H_1) was there will be a statistically significant difference in Japanese student athletes' perceptions of athletic training services by gender. Hypothesis 2 (H_2) was there will be a statistically significant difference in Japanese student athletes' perceptions of athletic training services by grade. Hypothesis 3 (H_3) was there will be a statistically significant difference in Japanese student athletes' perceptions of athletic training services by sport; Hypothesis 4 (H_4) there will be a statistically significant differences in Japanese student athletes' perceptions of athletic training services by their experiences with their high school trainers.

Definitions of Terms

Ritsumeikan University has high-level sports teams and most are part of the Division I group. In Japanese intercollegiate athletics, schools are assigned to different

divisions, and it is based on the teams ranking in the division in last season. For example, a team ranked lowest in division I group last season, are then placed and compete in division II group next season. Therefore, competing in division I group in a conference usually means that the team is categorized in highest level of group in the region. Ritsumeikan ATs provide service for the following teams; football, rugby, track and field, and basketball. Players participating on these teams are considered elite athletes in Japan. These teams recruited their players from the top level high school teams in Japan.

Acupuncturist:

Acupuncturist is one of Japan's traditional therapists. Acupuncture originated from China, and it was brought to Japan around the sixth century (Suzuki, 2006). It uses small needles and places the needle at specific spots called acupuncture points or meridians. To be an acupuncturist in Japan, one needs to go to vocational school to be eligible for the national certification examination. Acupuncturists are allowed to open their own clinic, but the Japanese national health insurance usually does not cover their treatment.

Judo Therapist:

Judo therapist is also a Japanese traditional therapist (Satoh, 2010). The history of judo therapy started in the early eighth century. Olympic martial arts "Judo" and

judo therapy have the same origin called “Jujutsu.” Jujutsu was known as “skills for both killing and curing.” To be a judo therapist, one must go to vocational school to be eligible for the national certification examination. Like acupuncturists, judo therapists can open their own clinic. However, unlike acupuncturists, Japanese national health insurance covers their treatment.

Certified Athletic Trainer (AT):

Certified athletic trainer (AT) is an allied health profession in the United States (Tsuruike, 2002). ATs are responsible for the prevention of injury, providing first aid, evaluation of the injury, and designing rehabilitation programs for athletes (Tsuruike, 2002). To become an AT, one must go to a college or university and complete a Commission on Accreditation of Athletic Training Education (CAATE) AT program. Students are then eligible for the certification exam upon completion of the program.

Japan Amateur Sports Association Athletic Trainer (JASA-AT):

The Japan Amateur Sports Association (JASA) established the athletic training certification system in 1994 (Japan Amateur Sports Association, 2010). JASA-AT is responsible for the health care of athletes, prevention and emergency care for athletic injuries, athletic rehabilitation, and strength training and conditioning. Currently, there are two ways to become a JASA-AT. One must go to vocational school or a university that has an approved JASA program to be eligible for the certification examination. Or,

one can obtain a recommendation from other amateur sports organizations such as the Tokyo Amateur Athletic Association and Japan Basketball Association. Then, JASA reviews and approves the applicants, and they become eligible for the certification examination.

Assumptions

Athletic Trainers specialize in prevention, evaluation, and rehabilitation of athletic injuries. In the United States, high schools, universities, and professional sports teams are common job settings for athletic trainers. The AT's knowledge of athletic injuries will benefit student athletes in Japan.

Since the survey was given to four different sports teams at Ritsumeikan University, each team may have received slightly different services depending on their needs, but it is assumed that all teams receive adequate AT services such as onsite practice coverage, treatment, and rehabilitation all directly supervised by the ATs.

Scope

Delimitations of this research included that subjects were limited to college student athletes at one university of Japan. Additionally, this study's participant only participated in sports of football, rugby, track and field, and men's basketball. The reason for these delimitations is that the Ritsumeikan University athletic training system was identified as similar to an American athletic training system, and all ATs at

Ritsumeikan were educated in the United States and are BOC certified, and only those four sports teams received AT services. The limitation of this study was that there were no previous studies that investigated patient satisfaction of AT services in Japan.

Significance of the Study

This research investigates Japanese collegiate athletes' perception of AT services. Recognizing the perception of a patient is very important for health care providers.

Athletic training is a young profession and not well-developed in Japan. Ritsumeikan University is one of the few universities that provides American style AT services. This research's results will help to improve service and education of ATs and other Japanese therapists or "trainers" who treat athletes.

CHAPTER II

REVIEW OF LITERATURE

Introduction

The AT profession is not well-developed and has not been recognized as an allied healthcare provider in Japan. Instead of having ATs, other therapists or other sports related professions work as a “trainer.” Meanwhile, the profession of athletic training was born in the United States. The National Athletic Trainers’ Association (NATA) is the organization established in 1950 for ATs. Athletic trainers were recognized as an allied health care profession in the United States in 1990 by the American Medical Association (AMA). Currently, ATs work in many different work settings i.e. schools, professional sports teams, industries, performance arts, NASCAR, rodeo, etc.

Barriers that hinder the AT profession from being recognized as an allied healthcare provider include the Japanese sports culture and historical issues. So, before conducting a patient satisfaction survey, those cultural and historical issues need to be addressed.

This literature review explains the globalization of athletic training, history, and the current status of Japanese athletic training or trainers. Also, this review will introduce results from previous research about athletes’ perception of AT services that has been done in the United States.

Globalization of Athletic Training

Ferrara (2006) reported that AT was primarily a North American Phenomenon. The worldwide organization for athletic trainers or therapists is the World Federation of Athletic Training and Therapy (WFATT), and the organization was established in 2000 (Ferrara, 2006). The purpose of the WFATT was to improve health care for athletes and physically active individuals, and it provides a forum for health care professionals to exchange ideas, treatment techniques, and knowledge (Ferrara, 2006). The National Athletic Trainers' Association (NATA) and Canadian Athletic Therapists' Association (CATA), and Japan Athletic Trainers' Organization (JATO) are charter members of WFATT (Ferrara, 2006). WFATT's vision is to develop a global athletic training or therapy education model (Ferrara, 2006).

To achieve this goal, WFATT analyzed the AT profession or therapy in different parts of the world (Ferrara & Ortega, 2010). Although the global educational model has not been established yet, Ferrara and Ortega (2010) stated it was important to have a vision for the global Athletic Training and Therapy (ATT) professions.

Ferrara and Ortega (2011) reported again after the World Congress in 2010. While, in 2000, a global education and credentialing model for athletic trainers and athletic therapists did not seem possible to be established, in 2010 this notion did not seem unattainable as countries and organizations continue to share this interest and work together (Ferrara & Ortega, 2011). Currently, the Board of Certification (BOC) and WFATT have assembled a Task Force on Global Credentialing with the purpose of investigating whether a global credential is possible (Ferrara & Ortega, 2011).

History and Current Status of Athletic Training in Japan

The “trainer” is a common term to describe all professions which support an athletes’ conditioning in Japan. So, coaches and “trainers” are two large categories in typical Japanese sports teams.

According to Ohashi (2003), AT has been becoming popular in Japan since the 1970s. In 1975, the NATA and the AT profession were first introduced in Japan, and American ATs came to Japan and taught athletic taping techniques (Ohashi, 2003). The ATs worked for the teams demonstrated how to tape and taught it to Japanese “trainers” (Ohashi, 2006). Mr. Jiro Shikakura, who is currently advisor of the JATO, became the first Japanese AT in 1977, and he also taught taping techniques in Japan (Ohashi, 2006). So, American style athletic training was gradually brought into Japanese sports society. Since then, Japanese people’s interest in sports medicine or AT increased, but there was not a way to be an AT in Japan. So, some people decided to go to the United States to study AT. Japanese Athletic Trainers’ Organization (JATO) was founded in 1996. It is an organization of the Japanese BOC certified ATs (AT), and it is supported by NATA (Ohashi, 2006). In 1994, Japan Amateur Sports Association (JASA) created the current Japanese certification system for athletic trainers (Ohashi, 2006).

Athletic Training Education System

To be a NATA-BOC certified athletic trainer, the person must attend a college or university that offers AT program that is approved by the Commission on Accreditation

of Athletic Training Education (CAATE). The CAATE is the agency responsible for the accreditation of professional (entry-level) athletic training programs (Board of Certification, 1999). Currently, the athletic training education curriculum is based on the BOC Role Delineation Sixth Edition (RD6) and the NATA Education Competencies Fifth Edition. The BOC RD6 consists of five domains: (1) Injury/illness prevention and wellness protection, (2) clinical evaluation and diagnosis, (3) Immediate and emergency care, (4) treatment and rehabilitation, (5) organizational and professional health and well-being. The courses of the AT program consist of eight competencies: (1) evidence-based practice, (2) prevention and health promotion, (3) clinical examination and diagnosis, (4) acute care of injury and illness, (5) therapeutic interventions, (6) psychosocial strategies and referral, (7) healthcare administration, (8) professional development and responsibility. Students who want to be an AT need to be accepted into the CAATE Accredited AT program and complete the curriculum. After the completion of the AT program, the person is eligible to sit for the BOC certification exam (Board of Certification, 1999).

The JASA created an athletic training certification and education program in 1994 (Ohashi, 2003). In 1995, JASA started providing courses and certification examination. There are two different ways to acquire certifications: (1) Take seminars and the examinations, (2) Enter a JASA accredited program and take examinations. According to Shiraki (2005), the curriculum of the JASA accredited program was designed by using examples from the curriculum of NATA AT programs. However, due to the difference of sports culture between Japan and the United States, JASA-AT

curriculum includes more strength and conditioning aspects than CAATE AT programs and has lower clinical experience requirement (Ohashi, 2003).

Sports Medicine/Athletic Training outside of the U.S. and Japan

According to a study conducted by The WFATT, there are several other professions similar to athletic trainers which exist in other countries.

One popular profession in European countries and countries in Oceania is physiotherapists. In British countries, Australia and New Zealand, physiotherapists play important rolls in the sports medicine fields. The definition of the physiotherapy/physiotherapists is slightly different in each country. However, their roll is similar to the physical therapists and AT in the U.S. The definition of the physical therapists in the United States is highly-educated, licensed health care professional who can help patients reduce pain and improve or restore mobility - in many cases without expensive surgery and often reducing the need for long-term prescription medication use and their side effects (APTA, 2012). The Association of Chartered Physiotherapists in Sports Medicine (ACPSM) was established in 1972 (Ohashi, 2003). The ACPSM is located in England, and has been responsible for modifying the Chartered Society of Physiotherapy's 'Standards of Physiotherapy Practice in Sports Medicine' to assure these focus specifically to working in a sporting environments (ACPSM). Countries that provide physiotherapy certification, physiotherapists are required to obtain a 4-year college degree and a three-year graduate program to be a physiotherapist. ACPSM

provides three main courses to the physiotherapists, which are taping, massage, exercise and rehabilitation. According to the ACPSM, these courses provide the opportunity to complete highly practical sport specific courses that are tutored by experienced sports physiotherapists.

The sports physiotherapist is a specialist of sports physiotherapy. Once certified as a physiotherapist, they are able to attend post-graduate courses to specialize in sports injury. In addition to physiotherapist, in Australia, there is a profession called sports trainer, sports trainers have similar skills and knowledge as an athletic trainer in the U.S. Also, Sports Physiotherapy Australia (SPA) was established to provide better opportunities to further sports physiotherapists' knowledge in sports physiotherapy via sports coverage opportunities (Ohashi, 2003).

Satisfaction of Athletic Training Services

As a health care profession, patients' perception of the services being provided is important to know. Most of the time, the "patients" treated by the U.S. ATs are injured athletes. Current research has investigated athletes' satisfaction with athletic trainers was conducted in the United States.

Initially, Unruh (1998) investigated athletes' perception of their athletic trainers and of the medical coverage their athletic department provided. Variables for Unruh's (1998) study included athletes' gender, high-profile and low-profile sports, and NCAA divisions that athletes compete in. The survey was based on Roll Delineation Study

conducted and published in 1994 by NATA (Unruh, 1998). As it is mentioned earlier, most current edition of Role Delineation study is sixth edition published by BOC in 2009.

The Role delineation Study provided an explanation of athletic trainers' duties (Unruh, 1998). The questionnaire that was used in this study asked performance of the duties of athletic trainers (Unruh, 1998). The questionnaire was sent to 32 athletic training programs, and eight of the AT programs participated. Unruh's (1998) result indicated females and males both play low-profile sports at the NCAA Division II level and females play high-profile sports in the NCAA Division II schools have lower perception than other subgroups of the athletes.

Unruh S, Unruh N, Moorman M, and Seshadri S. (2005) investigated collegiate athletes' satisfaction of athletic trainers. The study sample included both NCAA Division I and II collegiate athletes in four different time zones in the United States. The questionnaire was used to evaluate athletes' satisfaction rate. The questions were developed from each section of the NATA Role Delineation Study fourth edition published in 2004 (Unruh et al., 2005). Most of the questions were recorded using the 5-point Likert-scale. To analyze data, the score of each question was added to obtain the total score. The research found the satisfaction rate of women in high profile sports was the highest (Unruh et al., 2005). Men in low-profile sports had recorded lowest satisfaction rate (Unruh et al., 2005). Men in high profile sports and women in low-profile sports fell between the other two groups (Unruh et al., 2005).

Other studies on patients' satisfaction have been done in different settings. Reynolds (2010) conducted an online survey at NCAA Division II and NAIA schools. The

survey consisted of satisfaction to all six components of athletic training. The study revealed that attitudes that collegiate student athletes at the NCAA Division II and NAIA schools attitudes were favorable, and the satisfaction levels did not vary due to variables such as race, gender, competition level, and sports profile (Reynolds, 2010).

Porterfield (2006) was conducted another study at the NCAA Division II and III schools in Western Pennsylvania. A total of 203 athletes in the NCAA Division II and III schools completed a questionnaire with 60 questions. The questionnaire was created and used by Unruh (2005) for the previously reviewed research. Porterfield's (2006) study showed that athletes in the NCAA Division III schools had a significantly higher perception of care than NCAA Division II athletes. Also, women's basketball had a higher perception than softball and women's soccer across both NCAA Division II and III schools (Porterfield, 2006).

Social Support by Athletic Trainers

Even though, the primary roles of the athletic trainer are diagnosis, treatment, rehabilitation, and immediate care of the injury, ATs provide some social emotional support through activities like listening daily to athletes (Robbins & Rosenfeld, 2001; Bone & Fry, 2006).

Robbins and Rosenfeld (2001) investigated athletes' perceptions of social support provided by head coaches, assistant coaches, and athletic trainers pre-injury and during rehabilitation. Thirty-five male and female NCAA division I collegiate student

athletes who were forced to sit out of practice or competition for at least three days due to their injury answered a modified version of the Social Support Survey (SSS). The demographics of these athletes included male and female athletes ranging from freshmen to seniors. The participants played sports i.e. soccer, field hockey, wrestling, football, crew, track and field, cross country, fencing, lacrosse, volleyball, softball, and gymnastics. The result indicated that, among all three professionals, athletic trainers were perceived to provide the most support to injured athletes (Robbins & Rosenfeld, 2001).

Bone and Fry (2006) also studied about whether athletes' perception of social support provided by their athletic trainer was related to athletes' beliefs about the rehabilitation process. The subjects included the NCAA Division I athletes (35 men and 22 women), who had sustained an injury that caused them to miss no less than five consecutive days, participated in the research, and participants completed the Social Support Survey (SSS) and the Sports Injury Rehabilitation Beliefs Survey (SIRBS). The SSS was slightly modified to make it specific to the support received from ATs rather than any person who provides support. The SSS includes eight scales; listening support, task appreciation, task challenge, emotional support, emotional changes, reality confirmation, tangible assistance, and personal assistance. Also, the SIRBS was employed to measure athletes' beliefs about rehabilitation. The survey consists of five scales including susceptibility, treatment efficacy, self-efficacy, rehabilitation value, severity. Bone and Fry (2006) found that severely injured athletes who perceived their

athletic trainer providing social support helps them to believe in their rehabilitation programs.

CHAPTER III

METHODS

Introduction

The purpose of this research was to investigate the perception that Japanese collegiate athletes have in regard to appropriate athletic training services. The athletic training profession is not well-developed, but it is a growing area in Japanese sports society. Ritsumeikan University, where the survey was conducted, is one of the few Japanese universities that provides their student athletes American-style athletic training services. This was very important research to recognize Japanese college athletes' satisfaction and comfort levels regarding American-style athletic training services. This chapter is divided into three sections that include participants, instrumentation, and procedure.

Participants

The subjects for this research were Japanese collegiate athletes at Ritsumeikan University. The survey was conducted with four different sports teams: football, rugby, women's track and field, and men's basketball. At the time when the survey was conducted, 129 players were on the roster of the Ritsumeikan football team; 94 players were on the rugby team, 32 players were on the men's basketball team; 30 runners were on the track and field long distance team. The athletic trainers who cover the

sports at Ritsumeikan University assisted distributing the survey via email. The Principal researcher sent an email that contained the cover letter and the link to the online survey to Ritsumeikan University's athletic trainers. The athletic trainers distributed the survey to the team that he/she covers. The total population of the student athletes who participated in sports that were covered by BOC certified athletic trainers was 285, and all of the athletes were potential participants of this study.

Instrumentation

Matsuno Athletes Perception Scale (MAPS) was modified version of the Athletic Training Medical Interview Satisfaction Scale (MISS-AT) which was used by Reynolds (2010). Questions of the MISS-AT consisted of the eight components that included knowledge, communication, satisfaction and importance, organization and management, resources, environment, medical coverage, and athletes' demographic data. Except satisfaction and importance and athletes' demographic data components, six components were chosen based on Role Delineation Study and the Code of Ethics statements released by the NATA in 1999 and 2003 (Raynolds, 2010). The MAPS also consisted of questions that included the same eight components of MISS-AT. The MAPS was translated into Japanese language and distributed to Japanese athletes at Ritsumeikan University.

The MAPS included 35 questions measured on 5-point Likert scale. According to Reynolds (2010), the original MISS was used to measure patient-physician satisfaction

levels and the MISS-AT measures patient-athletic trainer satisfaction levels. In addition to changing the focus of the survey, patient-athletic trainer instead of patient-physician, the MISS-AT utilized the cognitive, affective and behavioral subscales to assess six components of athletic training (Reynolds, 2010).

MISS-AT consisted of 37 questions including 11 questions about athletes' demographic data. However, not all the demographic questions could be applied for Japanese athletes because of the differences in athletes' race, eligibility of participation, system of collegiate athletics, and sports teams/athletes involved in this study. The principal investigator modified the demographic questions for Japanese athletes. MAPS asks athletes' year in school instead of the age. Since the investigated teams did not have any non-Japanese athletes, the MAPS did not include question about athlete ethnicity. Instead of inviting all of the sports teams on campus, only four sports teams were invited to participate in the MAPS. Additionally, on the MAPS, the principal investigator added two questions that asked if student athletes had "trainers" in their high school and what kind of qualifications the high school trainer had.

The first component of the survey asked about the knowledge that their athletic trainer has. On this component, questions (8, 9, 17, 21, 23) identify if the athletic trainer has adequate levels of knowledge, and questions (11, 13, 19, 20, 22, 24) assessed the athletic trainer's communication skills with athletes or coaches. Questions 1 and 26 asked about perception of athletic trainers that athletes have in regard to satisfaction and importance. Questions (10 and 25) assessed the athletic trainers' organization and management skills. The next component looked at resources, and questions (4, 5, 14,

16, 18) asked if the athletic trainer and the institution's athletic training room have enough resources such as modality machines, rehab equipment, and spaces for rehab or treatment. Questions (2 and 3) asked if the athletic trainer treated athletes in a professional manner and if the athletic training rooms provided athletes with a positive atmosphere. The next component asked about Medical Coverage, and questions (6, 7, 12, 15) of the survey evaluated the medical coverage of Ristumeikan and its quality of care. The last part of the questionnaire focused on demographic data. The questions in this section (question 27 through 35) asked athletes ' years in school, gender, what sport the person plays, how often the athlete used the athletic training facility, and the last two questions asked if the athlete had any kind of "trainer" at his/her high school and what kind of qualifications the trainer had.

The cover letter included information about the principal researcher and faculty advisor, and the general nature of the research. It explained that the participation of the survey was voluntary and confirms the subjects' confidentiality/anonymity. It stated that the participants were free to terminate their participation at any time without prejudice; it also stated that completion and return of the survey implied their consent. The letter explained how the group results may be obtained, and who may be contacted if subjects had any questions or concerns.

The MISS-AT was previously used by Steeves (2007) and Raynolds (2010) to assess athletes' perception and satisfaction of athletic training services. Steeves (2007) stated that the validity and reliability of MISS-AT was confirmed, and Cronbach's

coefficients, ranging from $r=0.62-0.87$, which proved the MISS-AT to be a viable scale to measure levels of patient satisfaction towards athletic trainers.

Hypothesis 1 was that there will be a statistically significant difference in Japanese student athlete perception of athletic training services by gender. Hypothesis 2 was that there will be a statistically significant difference in Japanese student athlete perception of athletic training services by grade. Hypothesis 3 was that there will be a statistically significant difference in Japanese student athlete perception of athletic training services by sport. Hypothesis 4 was there will be statistical significant differences in Japanese student athlete perception of athletic training services in relation to their experiences with high school trainers.

A pilot study was conducted in Ritsumeikan University in Japan with sports that were not included in the actual studies and fifth-year non-eligible athletes on the four included teams. This pilot study determined the validity and reliability of the survey. A pre-test and post-test was conducted 3 weeks apart for each participant. Twelve student athletes at Ritsumeikan University completed pre- and post-pilot survey.

Procedure

The survey was conducted at Ritsumeikan University in Japan and was distributed via e-mail by the athletic trainers for the four identified athletic teams at Ritsumeikan University during the month of February, 2013. Athletes who were on the American football, rugby, women's track and field, and men's basketball teams were the

subjects for this research. Before the survey was conducted, coaches and athletic trainers for each team were contacted to obtain consent for their athletes' participation in this survey. The principal investigator sent the cover letter and an electronic link to the survey to the athletic trainers at Ritsumeikan University via email. The Ritsumeikan University athletic trainers sent the cover letter and survey link to the coaches for all four teams. The coaches sent the cover letter and survey link to their athletes. Athletes had four weeks to answer and complete the online survey. At the end of the first week period, the principal researcher followed up with athletes via email, and athletes received the follow-up emails every week until the end of fourth week. The estimated time to complete the survey was 15 to 20 minutes, however there was not a time limit for answering this survey.

This research was submitted for expedited review and approved by the Eastern Kentucky University Institutional Review Board (IRB) and approved on February 22, 2013.

Statistical Analysis

For both the pilot study and the primary research, the relationships between the perception and satisfaction of athletic training services and demographic data were analyzed using the bivariate Spearman rank correlation test for ordinal data (seven components), and the Pearson product moment correlation coefficient for ratio data (number of hours at practice, percentage of time). The mean and standard deviation

scores were calculated and compared to the values from the original MISS-AT (Raynolds, 2010) data. Differences between perception of athletic training services and the three sports were analyzed using analysis of variance. When applicable, a Scheffe's post hoc test was used as a follow up when differences between sports were detected. Data regarding past high school athletic trainer experiences were examined with frequency distributions. For all analyses, $p < .05$ was considered significant. The Statistical Package for the Social Sciences (SPSS, version 15.0, Chicago IL) was used for all analyses.

CHAPTER IV

RESULTS

Pilot Study

For the pilot study, student athletes were recruited from sports teams that were not from the American football, Rugby, Men's Basketball, and Women's Track and Field teams and fifth-year non-eligible players on the four included teams to avoid an overlap with the principle study. Student athletes who were on the roster of the four teams did not participate in the pilot study. Twelve athletes completed both pre- and post-survey. Participants took the pilot survey three weeks apart prior to the implementation of the primary research. The Spearman's rho values for 22 questions out of 26 total questions ranged between 0.321 and 0.944 (Knowledge, Communication, Satisfaction and Importance, Organization and Management, Resources, Environment, Medical Coverage). One question (Question 16) "The amount of medical supplies provided for use by my certified athletic trainer is sufficient" valued 0.158.

Participants

A total of 134 responses were obtained including 69 American football players, 42 rugby players, nine men's basketball players, and three women's track and field runners, and eleven people did not complete the survey. Results for subjects who failed to complete the survey or missed questions were excluded. The total number of

subjects analyzed included 16 freshmen (13.1%), 32 sophomores (26.2%), 40 juniors (32.8%), 30 seniors (24.6%), and four fifth-year or up students (3.3%). In this study, since there were three responses from female athletes, all women were excluded from the studies results.

Seven Components of Athletic Training Services

Reynolds (2010) and Steeves (2007) previously employed the Medical Interview Satisfaction Survey Athletic Training (MISSAT) to investigate athlete perception on seven components of athletic training services. The seven components were Satisfaction, Knowledge, Communication, Organization and Management, Resources, Environment, and Medical Coverage.

MAPS included all seven components that MISSAT included. Descriptive analyses were run on all seven components of athletic training services. Responses to questions regarding perceptions of athletic training were measured on a 5-point Likert Scale (1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=Strongly Agree). All numbers of responses in each component were added and averages of each component were calculated based on the number of questions in the component. Table 1 shows the numbers of responses, averages, and standard deviations for the MAPS survey.

Table 1. Matsuno Athletes Perception Survey (MAPS) Component Result

Components	N	M	SD
1. Knowledge	120	21.84	2.69
2. Communication	121	25.75	3.03
3. Satisfaction & Importance	122	9.25	0.85
4. Organization & Management	122	8.39	1.33
5. Resources	122	22.11	2.25
6. Environment	122	9.00	1.05
7. Medical Coverage	122	16.86	2.26

Figure 1, figure 2, and figure 3 show the distribution of responses regarding Knowledge, Communication, and Satisfaction components. Questions 8, 9, 17, 21, and 23 were analyzed to measure athletes' perception in regard to their athletic trainers' knowledge about athletic injuries and treatments or rehabilitation. Each question's average score of regarding the knowledge component was 4.30. More than 97 percent of subjects (N=120) scored 3.1 or higher.

Questions 11, 13, 19, 20, 22, 24 were analyzed to measure athletes' perceptions of communication skills that their athletic trainers have with athletes and coaches. Each question's average score of in the Communication component was 4.26. All subjects (N=122) scored 3.1 or higher.

Questions 1, 26 were used to assess athletes' perceptions of satisfaction and importance of athletic trainers. Each question's average score in the Satisfaction and Importance component was 4.63. More than 99 percent of subjects (N=122) scored 3.1 or higher.

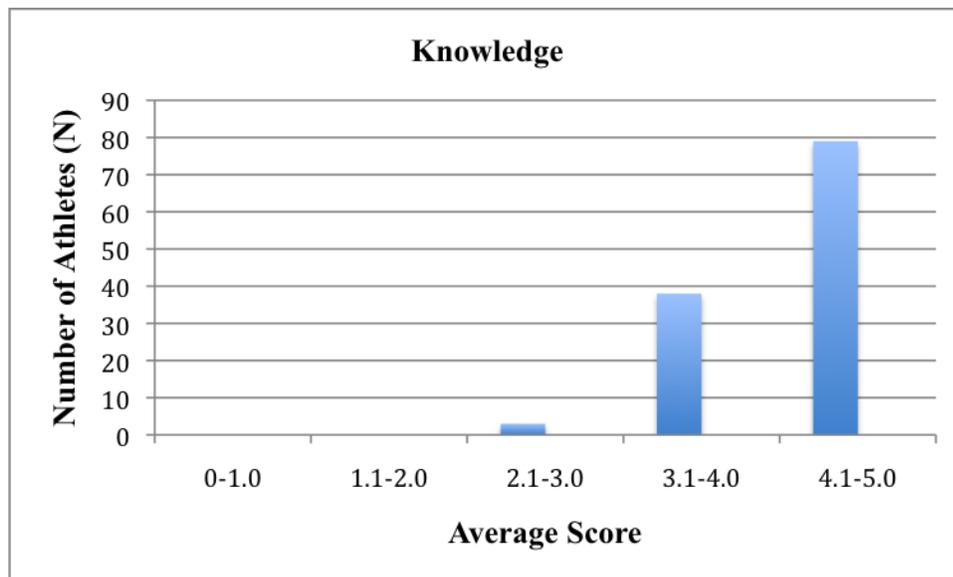


Figure 1. Frequency Distribution for Knowledge Component

(M=4.30, SD=0.769, N=122)

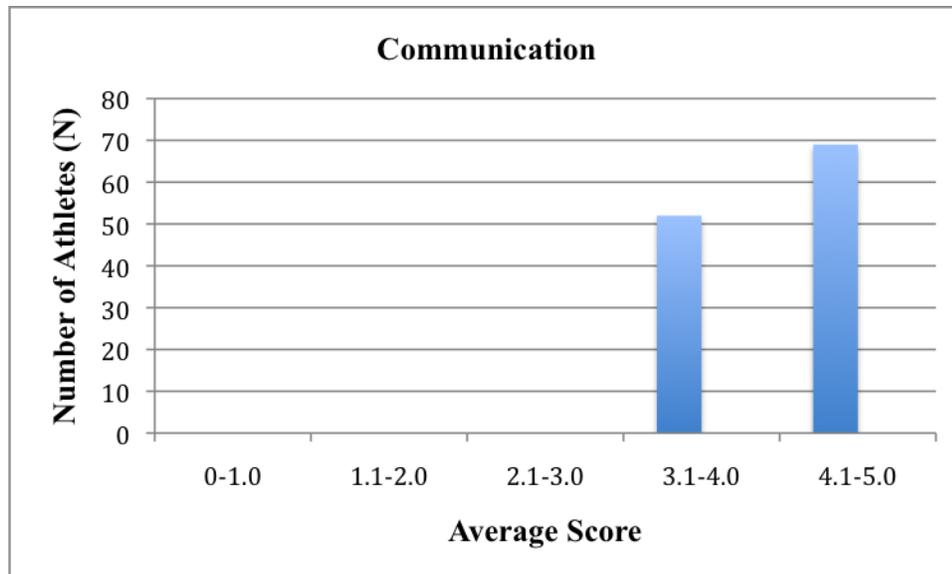


Figure 2. Frequency Distribution for Communication Component
(M=4.26, SD=0.633, N=121)

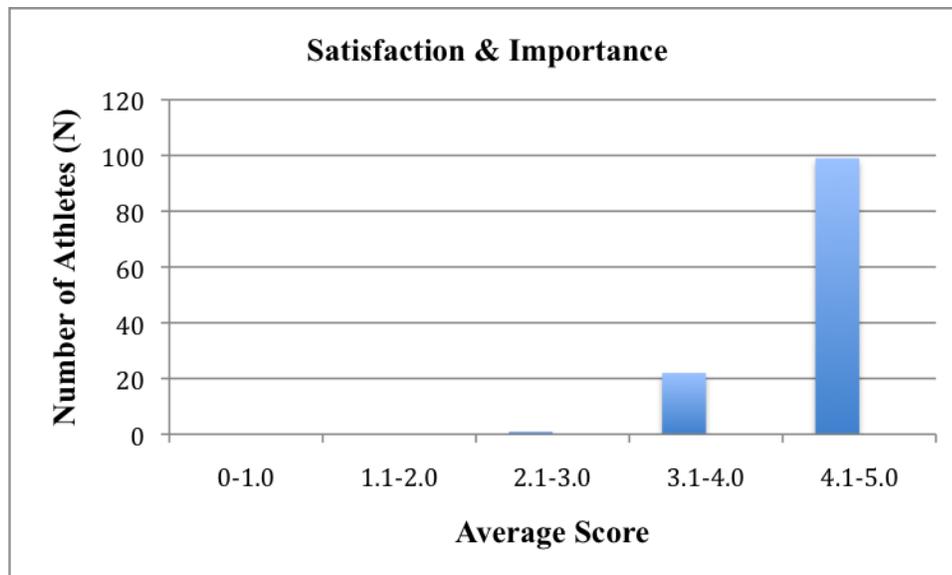


Figure 3. Frequency Distribution for Satisfaction and Importance Component
(M=4.63, SD=0.423, N=122)

Sports and Seven Components

Table 2 shows the descriptive statistics of each MAPS component analyzed by sport. All components demonstrate statistically significant differences in perception of each component of athletic training services between the three sports.

Table 2. Seven Components of Athletic Training Services

Components	Sport	Frequency	Mean	Standard Deviation	Sig. (<i>p</i> -value)
Knowledge	American Football	69	21.6812	2.84653	0.004*
	Rugby	42	22.6190	2.12938	
	Men's Basketball	9	19.4444	2.45515	
	Total	120	21.8417	2.69452	
Communication	American Football	69	25.9857	3.20549	0.002*
	Rugby	42	26.0952	2.54529	
	Men's Basketball	9	22.3333	1.32288	
	Total	120	25.7521	3.03117	
Satisfaction & Importance	American Football	69	9.2254	0.83147	0.013*
	Rugby	42	9.4524	0.80251	
	Men's Basketball	9	8.5556	0.88192	
	Total	120	9.2541	0.84852	

Table 2. Seven Components of Athletic Training Services (Continued)

Organization & Management	American Football	69	8.3803	1.38735	0.014*
	Rugby	42	8.6429	1.14384	
	Men's Basketball	9	7.2222	1.20185	
	Total	120	8.3852	1.33266	
Resources	American Football	69	9.2817	0.86492	0.045*
	Rugby	42	9.3333	0.78606	
	Men's Basketball	9	8.5556	1.13039	
	Total	120	9.2459	0.87492	
Environment	American Football	69	8.9577	1.04795	0.009*
	Rugby	42	9.2619	0.85709	
	Men's Basketball	9	8.1111	1.45297	
	Total	120	9	1.05235	
Medical Coverage	American Football	69	12.9577	1.6685	0.002*
	Rugby	42	13.0952	1.41092	
	Men's Basketball	9	11	1.65831	
	Total	120	12.8607	1.65802	

A Scheffe's post hoc analysis was run to determine where the differences lie between each sport. When comparing three sports, analyses revealed significant differences regarding the knowledge component between Men's basketball and rugby

teams ($p=0.005$). Scheffe's post hoc analyses revealed statistically significant differences for the communication component between Men's Basketball and American football teams ($p=0.002$), as well as between Men's basketball and rugby teams ($p=0.003$). Regarding the satisfaction and importance component, Scheffe's post hoc analyses revealed statistically significant differences between Men's basketball and rugby teams ($p=0.015$). Scheffe's post hoc analysis revealed statistically significant differences on organization and management component between Men's basketball and American football teams ($p=0.045$), as well as Men's basketball and rugby teams ($p=0.014$).

Table 3 represents the correlation for each component of athletic training services and demographic data. There was a statistically significant correlation between satisfaction, knowledge, and communication, and the question asked how often the athlete uses the AT facility during the season (Variable a). An athlete's year in school (Variable b) and knowledge, communication, organization, resources, and medical coverage showed statistically significant correlations. There were statistically significant correlations between all seven components and the number of hours per week that an athletic trainer is at team practice or games (Variable c).

However, between hours per week that athletes use the athletic training room and perceptions of all seven components of athletic training services, there were no statistically significant relationships. In addition, there were no statistically significant relationships between "Have you used the athletic training room?" and athlete perception of athletic training services.

Table 3. Correlation between Demographic Data and Seven Components

Correlations	1	2	3	4	5	6	7
	Knowledge (N=120)	Communication (N=121)	Satisfaction & Importance (N=122)	Organization & Management (N=122)	Resources (N=122)	Environment (N=122)	Medical Coverage (N=122)
(a) How often you use ATR (Numbers per week)	0.186*	0.216*	0.116	0.16	0.117	0.173	0.144
(b) Years in School (F, S, J, S, 5th or up)	0.354**	0.368**	0.164	0.192*	0.269*	0.108	0.254*
(c) How often your AT practice/games (%)	-0.264*	-0.299*	-0.275*	0.232*	-0.307*	-0.206*	-0.493**

Note. Variables (a) and (c) are Pearson's Moment Correlation Coefficient. Variables (b) is Spearman's rho.

* $p < .05$, ** $p < .001$

High School Experiences and Perceptions of Athletic Trainers

Question 34 asked athletes if they had any kind of “trainer” in their high school and question 35 also asked about their qualifications. Forty-three athletes had athletic trainers in their high school and 79 athletes did not have any “trainer” when they played sports (Figure 4). Figure 5 shows what kind of qualifications that their high school “trainer” had. Student athletes reported the highest number of judo therapists, followed by athletic trainers, which include both BOC certified athletic trainers and JASA-ATs.



Figure 4. Did You Have a Trainer in High School

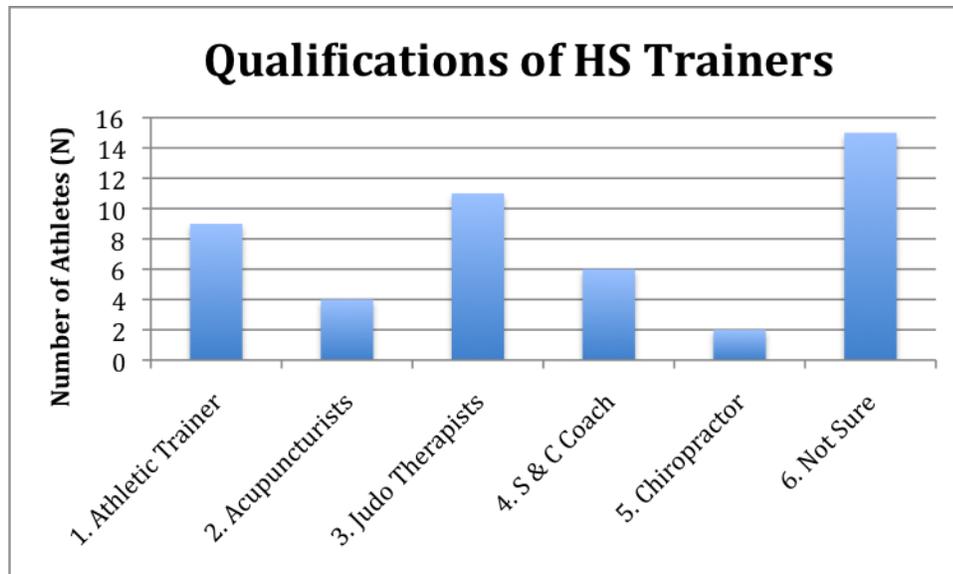


Figure 5. Qualifications of High School Trainers

Also, statistical analyses were run to determine the relationship between athletes who had trainers in their high school and their perception of athletic trainers in their current setting, as well as athletes who did not have an athletic trainer and their perception of athletic trainers in current setting. No statistically significant differences were found in the relationship of athletes' experience with trainers in high school and their perception of athletic trainers in their current setting in all seven components of athletic training services.

Athletes' Experience of Using Athletic Training Room and Perceptions

The survey asked athletes if they have used the Ritsumeikan University athletic training rooms before. Statistical analyses were run to determine if there was any difference in the perception between athletes who previously used athletic training

room and athletes who did not use it. There was no statistically significant difference found in each component of athletic training services in these two populations.

CHAPTER V

DISCUSSION

Introduction

The hypotheses of this study were (H₁) there will be a statistically significant difference in Japanese student athletes' perceptions of athletic training services by gender; (H₂) there will be a statistically significant difference in Japanese student athlete perception of athletic training services by grade; (H₃) there will be a statistically significant difference in Japanese student athlete perception of athletic training services by sport; (H₄) there will be a statistically significant differences in Japanese student athlete perception of athletic training services in relation to their experiences with their high school trainers.

Due to the small number of female student athletes who participated in this study, statistics were not able to be calculated by gender for H₂. Significant correlations with athletes' year in school were found in this study. As the student athletes become older, athletes' perception of five out of seven components increased especially in the knowledge and communication components ($p < 0.001$).

Table 1, Table 2, and Table 3 in the previous chapter provided descriptive statistics of Knowledge, Communication, and Satisfaction & Importance components. In all three components, athletes' average scores exceeded 4.0. More than 95 percents of subjects scored an average ≥ 3.1 . Especially, in the communication component, all subjects scored an average 5.0. Therefore, athletes' perceived their athletic trainers

were knowledgeable and have good communication skills with coaches and athletes. Additionally, athletes were satisfied with all services that ATs provided and felt ATs were an integral part of their intercollegiate athletic program.

Seven Components

The questionnaire, Matsuno Athletes' Perception Survey (MAPS), was a modified version of the Athletic Training Medical Interview Satisfaction Survey (MISSAT) (Steeves, 2007). The MAPS was translated into Japanese. Reynolds (2010) investigated athletes' perceptions of seven components of athletic training services using the MISS-AT. For five out of seven components, mean scores for each component were less than a full point difference between this study's MAPS results and Reynolds' (2010) MISSAT results. Differences of the other two components were less than 1.5 points. Therefore, Japanese collegiate student athletes have the same satisfaction levels of their ATs or the AT services provided. Meaning, ATs at Ritsumeikan University are able to provide the same levels of services as American certified ATs provide.

Demographic Data and Components

Athletes' demographic data and perceptions of all seven components were analyzed and the results were shown in previously in chapter IV (Table 3). Analysis of correlation and coefficient revealed that the athletes' year in school and five other components had statistically significant correlations. This demonstrates that athletes'

perception and satisfaction levels toward their athletic training services increases as an athlete has more experience or more interaction with the AT. The hours that their athletic trainers are at practice and all components had statistically significant correlations. These two results show that an athlete's perceptions and satisfaction was increased as the athletes have more contact with athletic trainers on the field. Therefore, athletes who use the athletic training room perceived that the ATs had a good knowledge in athletic injuries and rehabilitations and were satisfied with ATs' communication skills both with them and the coaches. Also, unlike Japanese "trainers", ATs stay with the team. Therefore, the athletic trainers' presence at practice or games, where other "trainers" usually are not present, has positively affected athletes' perceptions.

Differences Between Sports

There were statistically significant differences in all components and sports (Table 2). Scheffe's post hoc test revealed that there were statistically significant differences between Men's basketball team and other two sports that were American football, and rugby. Between rugby and American football teams, no statistically significant difference was found in Scheffe's post hoc tests. In Ritsumeikan University, there were three full-time athletic trainers covering four sports that were American football, Rugby, Men's basketball, and Women's track & field. The American football and rugby teams recently moved into a newer facility. American football and rugby

teams each have their own athletic trainer who covers all practices, games, and weight trainings of the team. However, the men's basketball and women's track and field team shares one full-time athletic trainer. At Ritsumeikan University, the women's long distance team is traditionally the main women's sport on campus. The athletic trainer's primary sport is the women's track and field team. Therefore, when the women's track and field team has events or training camps outside of campus, the athletic trainer has to travel, and the men's basketball team is left without an athletic trainer. Also, when there is a practice conflict between men's basketball and women's track and field teams, the athletic trainer needs to be at women's track and field practice. So men's basketball sometimes does not have medical coverage by the athletic trainer. Therefore, reduced coverage due to insufficient staff to provide full coverage may have caused the lower average score by men's basketball players on all seven components of athletic training services.

Previous High School Experiences

The survey asked about the athletes' experiences with "trainers" in their high schools. The results showed only 35% of student athletes had some kind of "trainer" in high school. However, the rest of the people (65%) did not have "trainer" in high school. This is especially surprising and a concern since American football, rugby, and men's basketball, all of which are contact sports and have higher risk of injuries. Statistical analysis did not find any significant relationship between athletes who had a "trainer"

and did not have a “trainer” in high school. Also, the survey asked about the qualifications that their high school trainer had. Eleven athletes had Judo therapists as a “trainer”, and it was the largest number. The number of athletes who had athletic trainers as a “trainer” in their high schools was the second highest with nine people. Some athletes identified having strength and conditioning coaches, acupuncturists, and chiropractors as a “trainer”. Statistically significant correlations were not found with different qualifications. This explained that an athletes’ experience with their high school “trainers” did not affect their perceptions of ATs in their current setting.

Conclusions

The research revealed that the Japanese student athletes had similar satisfaction levels to American collegiate student athletes’ satisfaction levels of AT services when compared to Reynolds (2010) investigation of NCAA Division II and NAIA schools in the United States. Since athletic training systems have just begun to develop in Japan, this study’s finding demonstrate that an American style AT services were accepted by Japanese collegiate athletes, and should encourages BOC certified athletic trainers who practice athletic training in Japan. This research also found that there are differences between sports. This finding suggested that the difference in coverage a sports team receives does affect athletes’ perceptions. Unruh (1998) and Unruh et. al (2005) both showed that athletes who play low profile sports had lower satisfactions than high profile sports athletes. At Ritsumeikan University, the Men’s basketball is in very similar

situation to low profile sports athletes in American college/university athletics. So, those athletes that do not have medical coverage all the time may want to receive better quality of services. The research found an athletes' year in school affected their perceptions of athletic training services. Athletes probably understand more about AT services as they become older and interact more with AT staff during their sports career in college. Athletes' previous experiences with "trainers" in high school were also investigated. The athletes' previous experiences did not affect their perceptions of AT services provided by the BOC certified athletic trainers at Ritsumeikan University. Ritsumeikan University ATs communicate with their athletes and explain to them what they need to do every day to improve. So, the athletes surveyed probably perceived AT differently and have understanding that other Japanese health care providers such as acupuncturists, Judo therapists, and chiropractors have different approaches to the injuries. Therefore, their previous experiences did not affect their perceptions.

Recommendations

The biggest difficulty that Japanese athletic trainers currently have is labor shortage. This is because of difference in sports culture, the budget issues, and a lack of uniformity in athletic training systems in Japanese collegiate athletics. At Ritsumeikan University, three full-time athletic trainers cover more than 300 athletes, and this does not include all the athletes or teams on campus. The teams that do not have an athletic trainer tend to have low satisfactions probably due to lack of attention or coverage

received. So, if an athletic trainer needs to travel with his/her main sports team, having another athletic trainer come to the facility to cover his/her assignment. This way, the athletes' perception might be improved and it increases all the teams' access to athletic trainers. Another solution would be for the school to hire more ATs full-time or part-time, and those ATs would cover the sports that are left without their athletic trainer when their AT off campus for other events with other sports.

Limitations

The study was limited due to low number of female participants. Because only one sport, women's track and field, was covered by a full-time athletic trainer, this study was not able to recruit enough female participants for statistical analysis. Also, the study was conducted using one school in Japan. Ritsumeikan University was one of a few schools that provides AT services by full time BOC certified athletic trainers in Japan. Finally, not all of the teams on campus received coverage by certified athletic trainers in the school.

Future Research

More female teams or athletes should be included in the subject of future study. Future research should include more sports. Also if other schools start providing AT services to their student athletes, the survey should be conducted there or across

multiple schools. Lastly, many athletic trainers in Japan currently work in the professional sports settings. Therefore, the MAPS survey should be administered to the various professional sports teams in future research.

REFERENCES

1. Baba, H., & Ishiyama, N. (2007). The suggestion about the development of an athletic trainer's society in Japan : The difference between an association that qualify as an athletic trainer and a trade association (Doctoral dissertation, Sendai University). *Bulletin of Sendai College*, 39(1), 44-58.
2. Board of Certification. (1999). Board of Certification | BOC. *Board of Certification*. Retrieved March 25, 2012, from http://www.bocatc.org/index.php?option=com_content
3. Bone, J. B., & Fry, M. D. (2006). The influence of injured athletes' perception of social support from ATCs on their beliefs about rehabilitation. *Journal of Sports Rehabilitation*, 15, 156-167.
4. Ferrara, M. S., & Ortega, C. (2010). A proposed global education model. *Athletic Therapy Today*, 15(1), 1-3.
5. Ferrara, M. S., & Ortega, C. (2011). That Was Then and This Is Now. *International Journal of Athletic Therapy and Training*, 16(1), 3-4.
6. Ferrara, M. S. (2006). Globalization of the athletic training profession. *Journal of Athletic Training*, 41(2), 135-136.
7. Japan Amateur Sports Association. (2010). Master Plan of JASA-AT. *Japan Amateur Sport Association*. Retrieved March 25, 2012.
8. Japan Athletic Trainers' Organization. (n.d.). *What Is JATO*. Retrieved March 25, 2012, from http://www.jato-trainer.org/jato.user.Page?menu_id=1
9. Japan Judo Therapists Association. (n.d.). *What Judo Therapy Is*. Retrieved March 25, 2012, from <http://www.shadan-nissei.or.jp/judo/seifukujutu.html>
10. Nakamura, C. (2005). General Consideration of Athletic Training. *Japanese Journal of Physical Fitness and Sports Medicine*, 54(1), 49-56.

11. Ohashi, Y. (2003). *Current Trends in Athletic Training Education and Certification in Japan* (Unpublished master's thesis). Marshall University.
12. Pilgrim, J. J. (2010). *Exploring Collegiate Student-Athletes' Satisfaction with Athletic Trainers* (Unpublished master's thesis). Michigan State University.
13. Porterfield, J. M. (2006). *College Athletes Perception of Care Provided by Certified Athletic Trainers* (Unpublished master's thesis). California University of Pennsylvania.
14. Prentice, W. E. (2013). Focusing the Direction of Our Profession: Athletic Trainers in America's Health Care System. *Journal of Athletic Training*, 48(1), 7-8. Retrieved March 15, 2013.
15. Reynolds, L. A. (2010). *Perceptions of Athletic Training Services at NCAA Division II and NAIA Institutions* (Unpublished master's thesis). Arkansas State University.
16. Robbins, J. E., & Rosenfeld, L. B. (2001). Athletes' perceptions of social support provided by their head coach, assistant coach, and athletic trainer, pre-injury and during rehabilitation. *Journal of Sport Behavior*, 24(3), 277-297.
17. Satoh, K. (2010). The Essential Task for the Field of Judoseifuku Therapy. *Japanese Journal of Complementary and Alternative Medicine*, 7(1), 63-66.
18. Shiraki, H. (2005). Development and Perspective of the Athletic Training in Japan. *Japanese Journal of Physical Fitness and Sports Medicine*, 54, 51-52.
19. Suzuki, N. (2006). Fundamental Perspective on Complementary and Alternative Medicine. *The Japan Society of Acupuncture and Moxibustion*, 56(5), 693-702.
20. Tsuruike, M. (2002). *Professional preparation of athletic trainer with regard to certification in Japan : Athletic training curriculum in the field of physical education at university* (Unpublished master's thesis). Osaka University.

21. Unruh, S. (1998). Perceptions of Athletic Training Services by Collegiate Student-Athletes: A Measurement of Athlete Satisfaction. *Journal of Athletic Training*, 33(4), 347-350.
22. Unruh, S., Unruh, N., & Moorman. (2005). Collegiate Student-Athletes' Satisfaction with Athletic Trainers. *Journal of Athletic Training*, 40(1), 52-55.
23. Yamamoto, T. (2006). Current Status and Issues of Athletic Rehabilitation. *Japanese Journal of Physical Fitness and Sports Medicine*, 55, 45-50.

APPENDIX A:
Informed Consent
(English)

Cover Letter (English)

October 29, 2012

Dear Ritsumeikan University Student Athlete:

My name is Jun Matsuno. I would like to invite you to participate in a survey about Japanese Collegiate Athletes' Perception of Athletic Training Services. I am currently a graduate student studying physical education concentrating on exercise and sport science at Eastern Kentucky University, Kentucky, USA. Athletic training is a young profession and not well-developed in Japan. Ritsumeikan University is one of the few universities that provides American style athletic training services. I am very interested in how student athletes at Ritsumeikan feel about the athletic training services provided by your certified athletic trainer on campus. Also, I hope that this research will enable the recognition of certified athletic trainers in Japan and improve their working environment to raise the quality of their service.

The participation of this survey is voluntary, and all information will be strictly confidential. You are free to terminate your participation at any time without prejudice. The survey is designed to be anonymous, so please do not put your name on the survey. Completion of the survey will imply your consent to participate. The survey has 35 questions and it should take about twenty minutes to complete.

Thank you for filling out this survey. The Japanese athletic training profession is still developing, and certified athletic trainers in Japan are working very hard for their recognition. Your cooperation for this survey helps to improve the Japanese athletic training profession.

Results will be analyzed this Spring and this research project will be completed by September 2013. If you are interested in obtaining result, or if you have any questions regarding this project, you can contact me at Eastern Kentucky University, 521 Lancaster Avenue, 203 Moberly Building, Richmond, KY 40475 (USA). You may also email me at jun_matsuno@mymail.eku.edu, or call 010-1-614-571-2596. My faculty advisor, Eric Fuchs, Ph.D. can be contacted at eric.fuchs@eku.edu.

Sincerely,

Jun Matsuno, ATC.
Principal Researcher
Graduate Student Physical Education Department
Graduate Assistant Athletic Trainer
Eastern Kentucky University

APPENDIX B:
Informed Consent
(Japanese)

Cover Letter (Japanese)

2012年2月15日

立命館大学学生アスリートの皆様

拝啓

向春の候、ますます御健勝にてご活躍のこととお慶び申し上げます。さて、突然のお便りを差し上げる失礼をお許してください。私は立命館大学経済学部卒業生で、現在、米国ケンタッキー州にあるイースタンケンタッキー大学大学院で体育学を専攻しております。この度は修士論文のためのアンケートに協力していただきたくお便りをさせていただきました。現在、大学でアスレティックトレーナーとして学生をサポートする上で、日本におけるアスレティックトレーニングの現状、そして、アスレティックトレーナーによる選手のサポートについて学生アスリートがどのように感じているのかに興味があり、今回アンケートという形で、それについて調査したいと思っております。

これから春のシーズンに入る忙しい時期に誠に恐縮ではありますが、アンケートにお答えいただきたく存じます。これはあくまでもご協力のお願いで、アンケートへの協力は強制ではありません。今回、回答していただいた情報は機密を守って管理致します。ご協力いただける場合、このアンケートは無記名ですので、名前等はアンケートに記入しないようお願い致します。

今回、この研究を通じて、日本のアスレティックトレーニングが学生アスリートにどのような受け入れられているのかの把握し、それを今後少しでもアスリートのため、または、現場で働いているアスレティックトレーナーのために役立てたいと考えております。皆様、どうかご協力をよろしくお願い致します。

なお、このアンケートならびに研究は2013年9月までに結果が出ている予定です。結果をお知りになりたい場合は、本研究が終了次第結果を報告させていただきます。また、何かご質問等がありましたら、下記のいずれかの連絡先にご連絡ください。ご協力よろしくお願い申し上げます。

敬具

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APPENDIX C:

Survey

(English)

MATSUNO Athletes' Perception Scale (MAPS)

Please choose the appropriate response that best suits your level of satisfaction with your current sports' athletic trainer(s) and the service they provide and circle the number.

All services that are provided by BOC Certified Athletic Trainers (ATCs) are subjects of all questions. Shinsuke Higashi ATC, Hideki Matsumoto ATC, Tomoyo Kageta ATC are the only BOC certified athletic trainers who provide athletic training services for athletic teams at Ritsumeikan University.

1. The athletic training room and its staff are essential in intercollegiate athletics.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

2. The certified athletic trainers at my institution conduct themselves in a professional manner.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

3. I feel the environment within my Athletic Training Room creates a positive atmosphere.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

4. I feel more comfortable as an athlete when a certified athletic trainer travels to away games with the team.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

5. My institution's training room has adequate resources for treatments and rehabilitation: ultrasound, muscle stim, ice, balls, and open space.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

6. The number of certified athletic trainers provided by my institution is effective for the school/athlete population size.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

7. There is always a certified athletic trainer at all of my practices, games, and events.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

8. I am satisfied with the quality of care provided by my certified athletic trainer.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

9. I feel confident with the knowledge demonstrated by my certified athletic

trainer regarding my injuries.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

10. My certified athletic trainer's method for proper rehabilitation of athletic injuries is ideal.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

11. The amount of time it takes for an certified athletic trainer to approach me for consultation once I enter the athletic training room is suitable

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

12. The location of my certified athletic trainer during practice is such that he/she is capable of responding quickly and properly to an injury.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

13. I am satisfied with the time lapsed from when the certified athletic trainer knows I have a serious injury until I see a physician.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

14. The level of concern my certified athletic trainer portrays toward each athlete is appropriate no matter what sport they are in.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

15. The quality of care provided to each athlete is consistent for both males and females.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

16. The amount of medical supplies provided for use by my certified athletic trainer is sufficient.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

17. My certified athletic trainer provides me with the information I need to prevent re-injury after sustaining an initial injury.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

18. I am satisfied with the availability of my team physician.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

19. The time it takes from when I get injured until the time the coaching staff is made aware of my injury is appropriate.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

20. The level of respect my certified athletic trainer gives me is suitable.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

21. I am satisfied with the assessment process my certified athletic trainer uses to evaluate my injury.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

22. I am satisfied that my certified athletic trainer is truly interested in helping me fully recover from my injury in a timely fashion so that I can return to competition.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

23. All of the certified athletic trainers trust one another to properly assist me as an athlete.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

24. I am confident in the certified athletic trainer's decision to remove me from a game or practice due to my injury or illness.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

25. I am satisfied with the training room hours of availability to athletes prior to practice or competition.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

26. Overall, I am satisfied with the athletic training services.

1. Strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly Agree

Demographic Data

Please choose the appropriate response and circle the number.

27. What year are you in school?

1. Freshman 2. Sophomore 3. Junior 4. Senior 5. 5th year or others

28. What is your gender?

1. Male 2. Female

29. What intercollegiate sport are you currently participate in?

1. American Football 2. Rugby 3. Womens Track & Field 4. Mens Basketball

30. Have you ever used your institution's athletic facility or services of athletic training staff?

1. Yes 2. No

31. How many hours a week does your certified athletic trainer stay with your team?

() Hours

32. How often is your certified athletic trainer on site when your team has practices/games in a week?

1. 100% 2. 99% - 76% 3. 75% - 51% 4. 50% - 26% 5. 25% - 1% 6. 0%

33. How often do you use the athletic training facility in a week during in-season?

1. Never 2. 1-2 times/week 3. 3-5 times/week 4. More than 5 times/week

34. Did you have a trainer in your high school?

1. Yes 2. No

35. If yes, what kind of qualification did the trainer have?

1. Athletic Trainer
2. Acupuncturist
3. Judo therapist
4. Strength & Conditioning coach
5. Chiropractor
6. I am not sure

APPENDIX D:

Survey

(Japanese)

MATSUNO Athletes' Perception Survey (日本語)

MATSUNO アスレチック・トレーニング アスリート意識調査

下記の質問は、現在あなたの所属するスポーツチームのアスレチック・トレーナーまたはそのアスレチックトレーナーの治療もしくはその他の行為に対する、満足度を調査するためのものです。もっとも適切な答えの番号を選んでください。

立命館大学スポーツ強化センター所属の東伸介トレーナー、松本秀樹トレーナー、陰田朋世トレーナーは 米国 BOC 公認アスレチックトレーナー(ATC)です。これらの ATC による全ての活動(治療、リハビリ等)がこのアンケートの対象です。

1. リハビリルームやそこにいるアスレチックトレーナーはこの大学の体育会スポーツチームにとって不可欠なものである。

1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる

2. 私の学校のアスレチックトレーナーはプロ意識をもって仕事をしている。

1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる

3. アスレチックトレーナーはリハビリルームを良い雰囲気になっている。

1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる

4. アスレチックトレーナーが遠征に帯同した時の方が安心感がある。

1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる

5. 私の学校のリハビリルームには、トリートメントやリハビリ等に必要な器具や設備が十分に備わっている。例)超音波、低周波、氷、バランスボール、またはリハビリ用の広いスペース

1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる

6. アスレチックトレーナーの数は学校の規模や選手数に対して適切である。

1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる

7. アスレチックトレーナーが練習や試合等、全てのチーム活動に帯同している。

1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる

8. 私はアスレチックトレーナーが行う治療等、全てのケアの質に満足している。

1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる

9. 私のチームのアスレチックトレーナーは怪我に関する知識が豊富である。

1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる

10. アスレチックトレーナーが行うリハビリに満足している。

1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる

11. リハビリルームに行った時、アスレチックトレーナーはすぐに対応してくれる。

1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる

12. アスレチックトレーナーは練習中、いつ怪我が起きても即座に対応できる場所にいる。
1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる
13. 私が重症をおった時、アスレチックトレーナーは出来るだけ早くチームドクターに診察してもらえるように手配をしてくれる。
1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる
14. アスレチックトレーナーは、どの競技の選手にも同じように接している。
1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる
15. 私のアスレチックトレーナーは男女に関係なく、同じようにケアをしている。
1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる
16. アスレチックトレーナーが治療の使う備品(絆創膏、テープ等)が常備されている。
1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる
17. アスレチックトレーナーは怪我の再発を防ぐために適切なアドバイスをくれる。
1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる
18. 私はチームに専属のドクターがいることに満足しています。
1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる
19. 私が怪我をした時、コーチ陣に私の怪我についての連絡が迅速に伝わっている。
1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる
20. アスレチックトレーナーは私に敬意をもって接してくれる。
1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる
21. 私のアスレチックトレーナーの怪我の評価方法が適切だと思う。
1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる
22. 私のアスレチックトレーナーは、いつも私が出来るだけ早く怪我から回復し、早期に競技復帰できるようにすることを考えてくれる。
1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる
23. アスレチックトレーナーたちがお互いに信頼しあって選手をサポートしている。
1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる
24. 試合や練習時に、アスレチックトレーナーが怪我や病気で私の競技続行が不可能だと判断する際、私はその判断が適切だと思う。
1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる
25. 試合や練習前のリハビリルームが利用できる時間は十分であると思う。
1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる
26. 総合的にアスレチックトレーナーのサービスに満足している。
1. 全く同意できない 2. 同意できない 3. どちらともいえない 4. 同意できる 5. 非常に同意できる

APPENDIX E:

Manuscript

MANUSCRIPT

Context: Athletic training is an international field. Athletes' perception or satisfaction of the services is important to improve and maintain the quality of athletic training services. This concept is important inside and outside of the United States.

Objective: The purpose of this research was to investigate the perception that Japanese collegiate athletes have in regard to athletic training services.

Design: An online survey was conducted to student athletes in one Japanese University that provides athletic training services to selected intercollegiate sports teams by BOC certified athletic trainers.

Setting: Japanese collegiate athletic training environment.

Patients or Other Participants: A total of 285 collegiate student athletes from American football, rugby, women's track and field, and men's basketball teams.

Main Outcome Measure(s): Athletes' levels of perceptions and satisfactions were assessed using online survey consisted of 35 questions (Matsuno Athletes Perception Survey).

Results: Differences of mean scores of the components were ranged within a full point except resources and medical coverage components. More than 95 percent of people scored mean score of 3.1 or higher in knowledge, communication, and satisfactions and importance components with mean scores of 5-point Likert Scale. Statistically significant differences were not found with athletes' previous experiences with their high school trainers.

Conclusions: Japanese collegiate student athletes have the same levels of satisfaction of their athletic trainers or the services that their athletic trainers provide as American collegiate student athlete have. This explains that athletes' experiences with their high school trainers do not affect perceptions of certified athletic trainers in current settings.

Key Words: athletic training services, perceptions, satisfactions, Japanese student athletes

INTRODUCTION

Athletic trainers are recognized as an allied health profession in the United States and play an important role at all levels of athletic programs. Athletic Trainers value the contributions sport and exercise make to the health and development of young athletes and recognize the importance of a physically active lifestyle for all (Prentice, 2013). The athletic trainer or training is becoming recognized internationally. In 2000, the World Federation of Athletic Training and Therapy (WFATT) was created to provide a forum for health care professionals to improve health care for athletes and physically active individuals (Ferrara, 2006). The WFATT is an organization of athletic training or therapy associations in different countries. One of their major projects is to develop a global athletic training/therapy education model (Ferrara & Ortega, 2010).

A significant difference between Japan and the United States is the athletic training system (Nakamura, 2005). It is important to recognize the differences of the sports culture in different countries, particularly in Japan (Baba & Ishiyama, 2007). Trainer has been a popular profession in Japan, however, the definition of trainer includes many kinds of professions such as acupuncturist, judo therapist, athletic trainer, and strength and conditioning coach. Currently, the majority of Japanese schools do not employ an athletic trainer in a full-time position. The chiropractor and acupuncturist who work as athletic trainers usually own their clinics and work there. So, most schools do not have any medical personnel during sports practices or games. The uniqueness of athletic trainers is that they stay with the team and provide services. A previous study done by Robbins & Rosenfeld found that athletic trainers

give athletes social support (2001). It is also found that the social supports that certified athletic trainers' (ATC) provided for injured athletes help athletes believe in their rehabilitation processes (Robbins & Rosenfeld, 2001) (Bone & Fry, 2006).

Currently, in Japan, there are a few universities that hire ATCs full-time. One of the schools is Ritsumeikan University. Ritsumeikan is the first Japanese university that hired an ATC full-time, and they have tried to have an American-style athletic training system. There are three ATCs working for the American football, rugby, track and field, and basketball teams. They have athletic training rooms and provide their athletes treatments and rehabilitations. A survey was conducted at Ritsumeikan University to investigate perceptions about the athletic training service that student athletes receive by certified athletic trainers at Ritsumeikan University. Some of the athletes there had a Japanese traditional style trainer when they were in high school. The traditional Japanese trainers are usually an acupuncturist, Judo therapist, or chiropractor. So, there should be some differences of the service between athletic trainers and other trainers or therapists.

Therefore, the purpose of this research was to investigate the perception that Japanese collegiate athletes have in regard to appropriate athletic training services. Since athletic training is a young and developing profession in Japan, current research has not investigated Japanese athletes' perception of athletic training services. However, for the athletic training profession and other athletic therapists, it is important to know how their athletes or patients feel about their services.

PROCEDURES AND FINDINGS

The subjects for this research were Japanese collegiate athletes at Ritsumeikan University. The survey was conducted with four different sports teams: American football, rugby, women's track and field, and men's basketball. At the time when the survey was conducted, 129 players were on the roster of the Ritsumeikan football team; 94 players were on the rugby team, 32 players were on the men's basketball team; 30 runners were on the track and field long distance team.

The Matsuno Athletes Perception Scale (MAPS) was created by the principal investigator. It was a modified version of the Athletic Training Medical Interview Satisfaction Scale (MISS-AT) which was used by Reynolds (2010) and Steeves (2007). Questions of the MISS-AT consisted of eight components that included knowledge, communication, satisfaction and importance, organization and management, resources, environment, medical coverage, and athletes' demographic data. The MAPS also consisted of questions that included the same eight components of MISS-AT. The MISS-AT consisted of 37 questions including 11 questions about athletes' demographic data. However, not all of the demographic questions apply for Japanese athletes because of the differences in athletes' race, eligibility of participation, system of collegiate athletics, and sports teams/athletes that were invited to this study. The principal investigator modified demographic questions for Japanese athletes. The MAPS included 35 questions, 26 questions were the same as MISS-AT and nine modified demographic questions created by the principal investigator. The questions consisted of the 5-point Likert scale, except demographic questions. The MAPS was translated into Japanese language.

A pilot study was conducted at Ritsumeikan University in Japan with sports that were not included actual studies and fifth-year non-eligible athletes on the four included teams. This pilot study determined the validity and reliability of the survey. A pre-test and post-test was conducted a week apart for each participant. The participants who completed pre- and post-pilot surveys were 12 student athletes at Ritsumeikan University. The range of correlations of each question was between 0.375 and 0.944.

All data collections were done electronically by using an online survey program. Before the survey was conducted, coaches and athletic trainers of each sport team were contacted to obtain consent for their athletes' participation in this survey. The principal investigator sent the cover letter and the link to the online survey to the head athletic trainer at Ritsumeikan University via email. The Ritsumeikan University head athletic trainer sent the cover letter and survey to the coaches of all four teams. The coaches sent the cover letter and survey to their athletes. Athletes had four weeks to answer and return the survey. The principal investigator followed up with athletes via email every week until the end of fourth week. Statistical analysis was performed by using SPSS. Alpha level was set at $p=0.05$ and statistically significant difference were found if the p -value is less than 0.05.

A total of 134 responses were obtained including 69 American football players, 42 rugby players, nine men's basketball players, and three women's track and field runners, and eleven people did not completed the survey. The total number of subjects analyzed included 16 freshmen (13.1%), 32 sophomores (26.2%), 40 juniors (32.8%), 30 seniors (24.6%), and four fifth-year or up students (3.3%). In this

study, since there were three responses from female athletes, all women were excluded from the results of the study. Five out of seven components' mean scores were less than a full point difference compared to the Reynolds' study (Table 1).

Table 1. Comparison of Mean Score of each Component Matsuno (MAPS) vs. Reynolds (MISS-AT) (2010)

Components	Mean (Matsuno)	Mean (Reynolds*)
1. Knowledge	21.84	21.89
2. Communication	25.75	26.20
3. Satisfaction & Importance	9.25	8.98
4. Organization & Management	8.39	8.48
5. Resources	22.11	20.86
6. Environment	9.00	8.98
7. Medical Coverage	16.86	15.47

Especially with knowledge, communication, and satisfaction and importance components, mean scores exceeded 4.0, and 95 percent of athletes scored an average of 3.1 or higher on a 5-point Likert Scale (1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=Strongly Agree). Especially in the communication component, all subjects scored an average of 5.0. Also, the survey asked their experiences with trainers in their high schools and qualifications of the high school trainers. The results showed only 35% of student athletes had some kind of trainer in high school. However, the rest of the population (65%) did not have any kind of

trainer in high school. No statistically significant difference was found in relationship of athletes' experience of trainer in high school and perception athletic trainer in current setting in all seven components of athletic training services.

DISCUSSIONS

The questionnaire, Matsuno Athletes' Perception Survey (MAPS), was a modified version of Athletic Training Medical Interview Satisfaction Survey (MISSAT) (Steeves, 2007). The MAPS was translated into Japanese language. Reynolds (2010) also investigated athletes' perceptions of seven components of athletic training services with using the MISSAT. There was less than a full point difference in five components and less than 1.5 points difference in the other two components. Japanese collegiate student athletes have same levels of satisfaction of their athletic trainers or the services that their athletic trainers provide. In other words, athletic trainers in the Japanese school are able to provide similar quality of services to American certified athletic trainers provide.

The results of student athletes' experiences with trainers in their high schools showed only 35% of student athletes had some kind of trainer in high school, meaning they do not have any kind of medical personnel during the practices and games. Athletic trainers are especially needed in American football, rugby, and men's basketball, all of which are contact sports and have higher risk of injuries. Statistical analysis did not find any significant relationship between athletes who had a trainer and did not have a trainer in high school. Also, the survey asked for qualifications of their high school trainer had. Eleven people had Judo therapists as a trainer, and it

was a largest number among all qualifications that Ritsumeikan student athletes had in their high schools. People who had athletic trainers as trainers in their high schools were the second highest with nine people. Some people had strength and conditioning coaches, acupuncturists, and chiropractors as a trainer. Statistically significant correlations were not found with different qualifications. This explains that athletes' experience with their high school trainers did not affect perceptions of certified athletic trainers in the current setting.

This research revealed that the Japanese student athletes had similar levels of satisfaction to American collegiate student athletes' levels of satisfaction of athletic training services that Reynolds (2010) investigated in division II and NAIA schools in the United States. The athletic training system has not been developed in most places in Japan. This data suggests that American style athletic training services were accepted by Japanese collegiate athletes, and it encourages the development of the BOC certified athletic trainers who practice athletic training in Japan. Athletes' previous experiences with trainers in high school were also investigated in this study. The previous experiences did not affect athletes' perceptions of athletic training services by the BOC certified athletic trainers. Ritsumeikan University certified athletic trainers communicate with athletes and explain to them what they are trying to do every day. So, the athletes probably perceived athletic training differently, and understand that athletic training and other Japanese healthcare providers such as acupuncturists, Judo therapists, and chiropractors have different approaches to injuries. Therefore, student athletes' previous experiences in their high schools did

not affect their perceptions of the BOC certified athletic trainers in Ritsumeikan University.

References

- Baba, H., & Ishiyama, N. (2007). The suggestion about the development of an athletic trainer's society in Japan : The difference between an association that qualify as an athletic trainer and a trade association (Doctoral dissertation, Sendai University). *Bulletin of Sendai College*, 39(1), 44-58.
- Board of Certification. (1999). Board of Certification | BOC. *Board of Certification*. Retrieved March 25, 2012, from http://www.bocatc.org/index.php?option=com_content
- Bone, J. B., & Fry, M. D. (2006). The influence of injured athletes' perception of social support from ATCs on their beliefs about rehabilitation. *Journal of Sports Rehabilitation*, 15, 156-167.
- Ferrara, M. S., & Ortega, C. (2010). A proposed global education model. *Athletic Therapy Today*, 15(1), 1-3.
- Ferrara, M. S., & Ortega, C. (2011). That Was Then and This Is Now. *International Journal of Athletic Therapy and Training*, 16(1), 3-4.
- Ferrara, M. S. (2006). Globalization of the athletic training profession. *Journal of Athletic Training*, 41(2), 135-136.
- Japan Amateur Sports Association. (2010). Master Plan of JASA-AT. *Japan Amateur Sport Association*. Retrieved March 25, 2012.
- Japan Athletic Trainers' Organization. (n.d.). *What Is JATO*. Retrieved March 25, 2012, from http://www.jato-trainer.org/jato.user.Page?menu_id=1

- Japan Judo Therapists Association. (n.d.). *What Judo Therapy Is*. Retrieved March 25, 2012, from <http://www.shadan-nissei.or.jp/judo/seifukujutu.html>
- Nakamura, C. (2005). General Consideration of Athletic Training. *Japanese Journal of Physical Fitness and Sports Medicine*, 54(1), 49-56.
- Ohashi, Y. (2003). *Current Trends in Athletic Training Education and Certification in Japan* (Unpublished master's thesis). Marshall University.
- Pilgrim, J. J. (2010). *Exploring Collegiate Student-Athletes' Satisfaction with Athletic Trainers* (Unpublished master's thesis). Michigan State University.
- Porterfield, J. M. (2006). *College Athletes Perception of Care Provided by Certified Athletic Trainers* (Unpublished master's thesis). California University of Pennsylvania.
- Prentice, W. E. (2013). Focusing the Direction of Our Profession: Athletic Trainers in America's Health Care System. *Journal of Athletic Training*, 48(1), 7-8.
Retrieved March 15, 2013.
- Reynolds, L. A. (2010). *Perceptions of Athletic Training Services at NCAA Division II and NAIA Institutions* (Unpublished master's thesis). Arkansas State University.
- Robbins, J. E., & Rosenfeld, L. B. (2001). Athletes' perceptions of social support provided by their head coach, assistant coach, and athletic trainer, pre-injury and during rehabilitation. *Journal of Sport Behavior*, 24(3), 277-297.

- Satoh, K. (2010). The Essential Task for the Field of Judoseifuku Therapy. *Japanese Journal of Complementary and Alternative Medicine*, 7(1), 63-66.
- Shiraki, H. (2005). Development and Perspective of the Athletic Training in Japan. *Japanese Journal of Physical Fitness and Sports Medicine*, 54, 51-52.
- Suzuki, N. (2006). Fundamental Perspective on Complementary and Alternative Medicine. *The Japan Society of Acupuncture and Moxibustion*, 56(5), 693-702.
- Tsuruiki, M. (2002). *Professional preparation of athletic trainer with regard to certification in Japan : Athletic training curriculum in the field of physical education at university* (Unpublished master's thesis). Osaka University.
- Unruh, S. (1998). Perceptions of Athletic Training Services by Collegiate Student-Athletes: A Measurement of Athlete Satisfaction. *Journal of Athletic Training*, 33(4), 347-350.
- Unruh, S., Unruh, N., & Moorman. (2005). Collegiate Student-Athletes' Satisfaction with Athletic Trainers. *Journal of Athletic Training*, 40(1), 52-55.
- Yamamoto, T. (2006). Current Status and Issues of Athletic Rehabilitation. *Japanese Journal of Physical Fitness and Sports Medicine*, 55, 45-50.