The Collegiate Male Athlete Perspective of Female Athletic Trainers

Master’s Thesis

By: Allie Samaan

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Abstract

Gender issues in the workplace are continually being discussed, but have yet to be discussed through the lens of Midwestern collegiate athletics. Despite the fact that females make up more than half of all athletic trainers, a gender bias may still exist. The purpose of this study was to investigate whether a gender bias exists in the field of athletic training and the characteristics of those who have gender bias. The researcher designed a quantitative research study to investigate the collegiate male athlete perspective of female athletic trainers. The instrument used in this study was a Google forms survey composed of demographic questions, questions regarding athletic training services the athlete has experienced in the past, and Likert score questions investigating whether they have no preference or prefer a male athletic trainer to treat various injuries and conditions by responding on a Likert scale. A Chi-Square test contingency table analysis was used to analyze the collegiate male athlete perspective of female athletic trainers. The study found that there was correlation between male athletes who had gender-specific injuries and their perspective of being treated by female athletic trainers for those injuries. There was no correlation between year in college of male athletes, political affiliation of male athletes, the gender from which the male athlete has received more athletic training services from in college, and the sport(s) in which the male athlete participated and their perspective of female athletic trainers.
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Allie Samaan
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Chapter One

Introduction

Overview

Historically, the field of athletic training was primarily made up of men, while the National Athletic Training Association was created in 1950, the first woman did not join until 1966. Today, females actually make up 55% of the 45,000 members of the National Athletic Training Association (NATA Fact Sheet, 2016). Despite the fact that females make up more than half of athletic trainers, a gender bias may still exist. Gender roles and biases are discussed in the news on a regular basis; specifically lately in the way women are perceived in the workplace. This research study specifically investigated the collegiate male athlete perception of female athletic trainers.

Background

The field of athletic training made great strides in gender equality following the creation of Title IX in 1972. Title IX specifically states, “No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits, or be subjected to discrimination under any education program or activity receiving federal assistance” (Title IX, 2015). Title IX covered not only education, but also covered athletics, which ended up impacting sports participation, as well as led to women starting to take advantage of opportunities in the field of athletic training. The National Athletic Trainers Association was established to set professional standards and regulations to help maintain athletic training quality (Women in Sports, 2017). Prior to Title IX there were only eight female members of
the NATA, and currently females make up more than half of the NATA’s membership (Women in Sports, 2017). The first NATA female member, Dorothy “Dot” Cohen, paved the way for seven more female members to join prior to the implementation of Title IX, which helped develop more opportunities for females. Following the creation of Title IX, Gail Weldon made huge strides for women in the athletic training field when she was chosen as the first NATA board certified female athletic trainer to be selected for the U.S. Olympic Medical Team (Women in Sports 2017). Also, Julie Max became the first female NATA Vice President in 1991, and in 2000, she became the first female President. She also was selected for the NATA’s Hall of Fame in 2007. Title IX and these significant female athletic trainers helped pave the way for the inclusion of female athletic trainers today. The implementation of Title IX and these influential women help explain the history of female athletic trainers, however how this influenced the current male athlete perception of female athletic trainers and the characteristics of those who have gender bias had yet to be investigated.

**Problem Statement**

The problem addressed in this study was one topic that is very popular today in the media. Gender issues in the workplace are continuously being discussed, but not discussed through the lens of Midwestern collegiate athletics. “Although Title IX protection may serve as motivation for female ATs to enter the collegiate ranks, the legislation does not mandate equal work environments for male and female ATs. Discrimination, which has been studied extensively within intercollegiate athletic administrations, has been linked to a reduction in organizational commitment and
motivation for career success…” (Mazerolle, Borland, & Burton 2012). While the number of women assuming positions within the athletic training field has increased, however the number of female head athletic trainers and female ATs at the collegiate level are still underrepresented at the NCAA Division I level (Mazerolle et al., 2012). One more layer to the problem is that, according to the National Athletic Trainers’ Association, of its 30,000 members in 2010 only 61 female ATs held positions in women’s professional sports, whereas only two female ATs held positions in men’s professional sports (O’Connor, Grappendorf, Burton, Harmon, Henderson, & Peel 2010). Even though that statistic is from eight years ago, it is evident that these problems are still relevant to the type of gender biases women in the athletic training field experience. These problems may be due to a gender bias as this study investigated. This study specifically investigated how collegiate male athletes perceive their female athletic trainers.

**Purpose Statement**

The purpose of this study was to investigate something outside of anything that has been looked into before. The purpose of this study was to investigate whether a gender bias exists in the field of athletic training and the characteristics of those who have gender bias. Gender bias in the athletic training field had been investigated, however it had not been addressed using all male athletes and looking into different characteristics of the male athletes, and seeing whether that correlates to what gender they prefer to get their athletic training services provided by. Looking into different characteristics, like race, age, sport, religion, political affiliation, and experiences, it would be informative to see whether those characteristics play a role in whom they
would prefer to get athletic training services from. The results, either showing a positive or negative significance, would be beneficial to both male and female athletic trainers because there had not been research on gender bias in athletic training in several years. Also, there had yet to be research that had gone as specific as this research did. This research was an updated and detailed representation for how female athletic trainers are perceived by their male collegiate athletes. If the results display positive significance, this research could help improve the confidence of female athletic trainers. If the results were display negative significance, this information was crucial for female athletic trainers to be aware of, so that they can work toward earning the trust and respect they deserve in the field of athletic training.

In addition, the purpose of this study was to help future female athletic trainers in the field, so that they are aware of such perceptions and gender biases found in male collegiate athletes found through this study, and then they could take this knowledge with them on their career journey through athletic training.

**Research Questions**

1. What were the characteristics of collegiate male athletes who prefer male athletic trainers over female athletic trainers?

2. What were the characteristics of collegiate male athletes who have no preference in male or female athletic trainers?

**Hypotheses**

Five sets of hypotheses were analyzed in this study using five data sets.
Data set one:

H₀: There is no correlation between year in college of male athletes and their perspective of female athletic trainers.

H₁: There is a correlation between year in college of male athletes and their perspective of female athletic trainers.

Data set two:

H₀: There is no correlation between political affiliation of male athletes and their perspective of female athletic trainers.

H₁: There is a correlation between political affiliation of male athletes and their perspective of female athletic trainers.

Data set three:

H₀: There is no correlation between the gender from which the male athlete has received more athletic training services from in college and their perspective of female athletic trainers.

H₁: There is a correlation between the gender from which the male athlete has received more athletic training services from in the college and their perspective of female athletic trainers.

Data set four:

H₀: There is no correlation between the sport(s) in which the male athlete participates in and their perspective of female athletic trainers.

H₁: There is a correlation between the sport(s) in which the male athletes participate in and their perspective of female athletic trainers.
Data set five:

H₀: There is no correlation between male athletes getting treated for gender-specific injuries and their perspective of female athletic trainers.

H₁: There is a correlation between male athletes getting treated for gender-specific injuries and their perspective of female athletic trainers.

**Definition of terms**

**Female Athletic Trainer (AT):** A female highly qualified, multi-skilled health care professional who collaborates with physicians to provide preventive services, emergency care, clinical diagnosis, therapeutic intervention, and rehabilitation of injuries and medical conditions (NATA)

**Collegiate male athlete:** Undergraduate male student participating in an NCAA sport

**Conservative:** Having traditional values and attitudes toward change or innovation, usually related to politics or religion

**Liberal:** Open to new behaviors or opinions and willing to discard traditional values, usually related to politics or religion

**Political view affiliation:** Conservative or Liberal

**National Athletic Trainers Association (NATA):** The professional membership association of certified athletic trainers and others who support the athletic training profession (NATA)

**Chapter Summary**

This chapter provided an overview of the evolution of female athletic trainers. The problem addressed in this study was gender bias in the workplace, and whether it specifically was a problem in Division III athletics for female athletic trainers. The
Purpose of this study was to investigate whether a gender bias exists in the field of athletic training and the characteristics of those who have gender bias. This study could help investigate how collegiate male athletes from a Midwestern college perceive female athletic trainers, which could help develop and grow the women that are entering or already in the field of athletic training. This way, if the results were positively or negatively significant, women in the athletic training field could be more aware and work toward gender equality in the workplace. Chapter two will review related literature on the research done for this study.
Chapter Two

Review of Related Literature

Introduction

The purpose of this study was to investigate whether a gender bias exists in the field of athletic training and the characteristics of those who have gender bias. The related literature discussed in this chapter will review a) the overall history and historical barriers of female athletic trainers; b) gender bias in athletic training; c) factors related to athlete perspective; d) comfort and satisfaction of athletic training services; and e) the social supportive role of athletic trainers.

The Overall History and Historical Barriers of Female Athletic Trainers

There is a long history of female athletic trainers working in the field, especially making a greater presence in the last two decades. In 1950, when the National Athletic Trainers Association was created, no women were members. In 1966 the first women joined the profession, and between 1966 and 1972 eight women were recorded as members (Gorant, 2012). The passage of Title IX in 1972 helped pave the way for women athletes, which opened the door for female athletic trainers to meet the increased demands of female athletes (Gorant, 2012). However, it appears that Title IX had an impact on the number of female athletic trainers in leadership positions from the merge of men’s and women’s athletic departments (Dieringer, 2007). With the impact of Title IX, there is still a lack of female represented, for example being that in 2012, only 17.5% of all Division I institutions employ a woman as female athletic trainer (Gorant, 2012).
As for the extant research on the history of female athletic trainers and the roles of female athletic trainers in the field, there are a wide variety of studies diving into these topics. In 2013, Leslie Martin actually investigated the role of women in athletic training and reviewed literature examining just that. The objective for her literature review was meant to synthesize and understand the past, present, and future of the women in the profession of athletic training (Martin, 2013). The narrative went over history, the current status of women in athletic training, and then what was to come in the field of athletic training for future women. The research concluded that there was continued growth in the field of athletic training for women, even though there were barriers to overcome, and in spite of the equal membership in numbers in the National Athletic Trainers Association, women were not equal to men in higher administrative positions and some male-dominated sports (Martin, 2013). Given these conclusions, it was clear there was a long history of female athletic trainers, but whether history repeats itself and continued to have low representation of women in administrative roles and in some male-dominated sports was the question.

Another study that explored the presence of athletic trainers, but looked at trends based on age, sex, and setting factors also drew some conclusions. In a study done in 2011, through a cross-sectional survey, a “marked decline in female athletic trainers occurred at the age of 28 years, yet the male population increased at the secondary school level, suggesting setting shift” (Kahanov & Eberman, 2011). Factors that may have influenced such a shift were burnout, fatigue, pay scale, and a misunderstanding of professional culture and job duties (Kahanov et al., 2011). Both
research examples show the historical journey of female athletic trainers and what kinds of shifts and changes are happening in the field.

The role in which female athletic trainers take on was something that has been researched prior, specifically by three researchers working together to examine the experience of female athletic trainers in the role of head athletic trainer. A qualitative study was conducted by interviewing eight female athletic trainers who serve in the role of head athletic trainer participated (Mazerolle, Burton, & Cutrufo, 2015). Through a semi structured phone interview, six major themes emerged from the analysis regarding the experiences of female head athletic trainers (Mazerolle et al., 2015). The themes that emerged were that opportunities, leadership qualities, and personal characteristic factors led to the assumptions of the role of the head athletic trainer (Mazerolle et al., 2015). Women holding back from their potential, family challenges, and organizational barriers all serve as potential obstacles to assuming the role of head athletic trainer (Mazerolle et al., 2015). This study helped further understand the role in which female athletic trainers are taking in the field of athletic training, and if historical roles and barriers women are accustomed to shape their experiences. In addition to the theme of family challenges, it was mentioned in another study that there are barriers that female athletic trainers have experienced. In a study in 2010, four researchers looked into the perspective of female athletic trainers when it comes to working in the secondary school and collegiate employment settings (Kahanov, Loebsack, Masucci, & Roberts, 2010). In an original survey developed, the information received would look into parent and nonparent status, the perception on motherhood, and employment setting decisions (Kahanov et al., 2010).
The results indicated that past female athletic trainers experiences had a perception that motherhood created more challenges or struggles in the work and family settings (Kahanov et al., 2010). This research concluded that both groups agreed that parenting could affect the work environment and the choice to change employment settings and careers (Kahanov et al., 2010). This research suggested very similar conclusions to the research previously shared by Mazerolle, Burton, and Cutrufo (2015) in which they found that many of their participants believed that they were able to handle the demands of the head athletic trainer position because they did not have children (Mazerolle et al., 2015). Many women shared their thoughts on motherhood and parenting and whether balancing the role as head athletic trainer was seen as too much from their male administrators.

When it comes to the different historical barriers female athletic trainers have experienced, there was a wide variety of research exploring this. Kyle Momsen did his dissertation on the perspectives of female athletic trainers, one aspect of his research he looked into the barriers female athletic trainers have faced and if those barriers were still present today (Momsen, 2014). Much to his surprise, he found that nine of the women he interviewed thought that they did not face any barriers or challenges because on their gender when it came to their career or leadership positions taken (Momsen, 2014). In addition, “the women reported that they themselves did not face any barriers, but it was clear that they were not in disagreement with the literature about the barriers that women in their field often face” (Momsen, 2014). However, Momsen did say that a few women believed they had to work harder than men, which could be seen as a barrier by many, but not seen
as one by those particular women. That type of study helped further explore the history of research looking into the different barriers of female athletic trainers, and showed positive results in which female leaders perceive them. Another positive example of data showing that women in fact have made improvements when it comes to equality in this field was the study done by Katherine Dieringer in 2007. She used a modified quantitative survey from a study done in 1996/1997 on the perception of male and female athletic trainers in regard to opportunities for women in leadership, awards recognition, networking, family and job conflict, and hiring, and promotion (Dieringer, 2007). The findings showed that males and females both believe that female were experiencing greater opportunities in all aspects, however that there was inequality and obstacles especially due to their desire to work as an athletic trainer and raise a family (Dieringer, 2007).

There was quite a bit of research about the history of female athletic trainers and the barriers that they have had to overcome, and JoAnne Gorant looked into how female head athletic trainers in NCAA Division 1 Football Athletics made it to the top. The research focused on the issues of barriers to advancement and their ability to overcome such barriers. The results indicated the barriers include low aspirations, the family division of labor, and the breaking into the “old boy’s club” (Gorant, 2012). This research also looked into what is lacking when it comes to being able to advance in the field, and that was career mentoring (Gorant, 2012). Women felt that there was no guidance or preparedness for women entering head athletic trainer roles, which serves as a barrier. This research along with the other studies really show how female
athletic trainers are very present in the field, however there are still barriers interfering with the strides that are being made.

**Gender Bias in Athletic Training**

Gender bias in the workplace has been discussed in the media quite frequently in the last decade, specifically in the more recent years. The topic of gender bias in athletic training has been delved into throughout several studies, but in different ways and different questions being asked.

As for the research that has investigated quantitatively the current state of gender bias, Lauryn McCurry (2010) researched the current state of gender bias in Division III Texas colleges. Quantitatively, she created a survey that was given to male and female athletes to complete. The survey explored the comfort level for various injury related issues. A common theme showed that there were no significant differences except on questions related to general medical conditions and gender specific injuries. “These results indicated that male athletes rated perceptions of male athletic trainers significantly higher than female athletic trainers on general medical conditions and gender specific concerns” (McCurry, 2010). Within the gender analysis, the results indicated male athletes had a significantly higher sexism score than female athletes.

Gender bias and gender stereotypes go hand and hand, and Monica Ohkubo investigated the experiences of such by female athletic trainers. Through semi-structured in-depth interviews, she was able to develop three raw data themes, which concluded that gender stereotypes exist for female intercollegiate athletic trainers and such stereotypes give rise to negative consequences for these women (Ohkubo, 2008).
This research was similar to a study done by three researchers looking into the experiences of young female athletic trainers in NCAA Division I intercollegiate athletics. The research questions specifically asking, “How do female athletic trainers navigate gender issues in the collegiate work setting? (Burton, Borland, & Mazerolle, 2012). This research was done to further understand the challenges and obstacles faced by young female athletic trainers working in NCAA Division I athletics (Burton et al., 2012). This study explored whether issues of power and gender stereotyping contribute to the lack of women in head athletic trainer positions in intercollegiate athletics. Data gathered from 14 female athletic trainers at Division I Universities indicated that male coaches used gender stereotypes to challenge the professional competence of the participants, and used formal and informal work practices to reinforce their power over the participants (Burton et al., 2012). Burton found that clear communication and assertiveness with both coaches and players about expectations and philosophies regarding medical care can help combat the gender stereotypes they experience (Burton et al., 2012).

Another area of inquiry relating to gender bias regarded the lack of female athletic trainers in male professional sports. This was investigated using a mixed methods approach, surveying current female athletic trainers at the Division I college level. The purpose was to demonstrate the perceived challenges of being a female athletic trainer for a male’s sports team and why there is a lack of female athletic trainers at the professional level by using topics of harassment, discrimination, and work life balances as three reasons (Graf, 2014). This data provided different results from the ones previously discussed since there was no difference between the
experiences working with male and female sports and dealing with negative situations. However, all this research on gender bias for female athletic trainers helps show what areas of gender bias have been explored, and what missing pieces have yet to be examined.

Factors Related to Athletes’ Perception

There has been little research done on the factors that influence how athletes view their athletic trainers. However, the limited research that has been done shares different factors that may affect the way athletes view athletic trainers.

A study done at the University of Nevada, Las Vegas examined how athletes perceived quality of care by athletic trainers. With 464 athletes participating, the study evaluated multiple aspects of care and found there was three aspects athletes valued most in an athletic trainer. The findings were gathered by looking closely into the type and length of sport participation, academic class status, number of athletic trainers seen, either being a full time athletic trainer or graduate assistant athletic trainer, number of interactions, injury, domains, values, and reason for interacting with an athletic trainer (Foster, 2015). The results indicated that the factors were knowledge, availability, and communication, which affected how the athletes perceive their athletic trainers (Foster, 2015).

The perception of how athletes view certified full time and certified graduate assistant athletic trainers was studied by Southern Illinois University recently. With 86 participants, Brainerd (2017) collected the data through a survey given to the participants. The survey consisted of 11 questions about their perception of an athletic trainer (Brainerd, 2017). By splitting up the data by athletes who had a full time
athletic trainer and athletes who had a graduate assistant athletic trainer, the results indicated that student athletes perceived full-time athletic trainers and graduate assistant athletic trainers similarly (Brainerd, 2017). A common theme found through the research was that there could be several reasons for these results, one being the hours put in by graduate assistants is significant, which may influence how student-athletes perceive them as professionals (Brainerd, 2017). Another factor leading to the similar perception of the two is the mere fact that both are still certified athletic trainers, and athletes may not see a difference in their engagement with the two groups of professionals. Both represent factors that may alter the perception athletics have of their athletic trainers.

**Comfort and Satisfaction in Athletic Training Services**

There has been a wide variety of research on the comfort and satisfaction in athletic training services representing an important aspect to study. Comfort is something all athletes desire, and satisfaction is what athletic trainers desire for their athletes. Scott Unruh investigated the original research done on this topic in 1998, examining athletic satisfaction in athletic training services. The purpose was to determine whether athletes of different subgroups demonstrated differences in perceptions of their athletics trainers’ services by measuring differences in their cumulative perception scores by gender, sport profile, and level of competition (Unruh, 1998). The results indicated several different findings, one being that male athletes viewed their athletic trainers more favorably than did female athletes. When it came to high profile and low profile athletes, it was found that most athletes in low profile sports perceived their satisfaction in their athletic trainers less favorably
Scott Unruh and three other researchers again studied this research in 2005. The same research was gathered, along with the same results being expressed. The findings were similar in the fact that men and women in low-profile sports demonstrated lower levels of satisfaction (S. Unruh, N. Unruh, Moorman, & Seshadri, 2005). Female athletes demonstrated higher satisfaction than male athletes, and athletes in high-profile sports demonstrated greater satisfaction with their athletic trainers (Unruh et al., 2005). This research helped indicate how different subgroups believe their satisfaction to be in athletic trainers.

The comfort and care athletic trainers provide to athletes has been discussed previously in research, specifically looking at the NCAA Division I football players’ perception. One study looked specifically at football players’ comfort with care provided by same-sex and opposite-sex athletic trainers (O’Connor, Grappendorf, Burton, Harmon, Henderson, & Peel, 2010). The study looked at the difference in opinion when it came down to gender specific and non-gender specific injuries and conditions through the lens of role congruity theory (O’Connor et al., 2010). Results indicated that male football players were more comfortable with treatment by a male athletic trainer for gender specific injuries and conditions than they were with treatment by a female athletic trainer (O’Connor et al., 2010). As for psychological conditions and depression, female athletic trainers were preferred over male athletic trainers. A common theme indicated that the care being provided by a certain gender could alter the perception of satisfaction by athletes.

A similar study was conducted sharing the same theme, however looking at both male and female athletes self-reported comfort with injury and condition care by
same sex and opposite sex athletic trainers. For gender-specific injuries and conditions, both male and female athletes felt more comfortable when provided care by a same sex athletic trainer (Drummond, Hostetter, Laguna, Gillentinte, & Del Rossi, 2007). This study looked deeper into the results, and asked what the reason for discomfort may be. Both male and females indicated gender related as the most likely reason for discomfort (Drummond et al., 2007). It is important to note that this theme is common and that athletes do experience discomfort especially if the injury or condition is intimate in nature (Drummond et al., 2007). All past research conducted on the satisfaction and comfort of athletes on their athletic training services provided help delve deeper into the topic of how male athletes perceive female athletic trainers today.

**The Social Supportive Role of Athletic Trainers**

It is important to note the role that athletic trainers take when it comes to social support. A few studies have researched the role that athletic trainers take on when it comes to the supportive role. One study in specific looked at the individualized social support needs of male and female athletes in injury rehabilitation (Bruns, 2015). The study investigated whether there were gender differences for expected and received social support prior to injury, after injury, and in the mid point of the rehabilitation process by their coaches and athletic trainer. Results showed that there was no lack of athletic trainer social support in any place of time in the rehabilitation regardless of gender (Bruns, 2015). This research was interesting in the fact that regardless of gender there was no difference in how they
perceived their support. It was important to note that gender of the athletic trainer was not noted in the study.

Another study looked into the same research on the injured athletes’ perceptions about social support. The study wanted to look into how the social support differed between athletic trainers, coaches, and teammates. The results proved to be similar to the previous study, and indicated that injured athletes were more satisfied with social support provided by athletic trainers (Clement & Shannon, 2011). In addition, the injured athletes reported that social support provided by an athletic trainer contributed more to their overall well being (Clement et al., 2011). It would have been interesting for both studies to investigate if this perception changed according to the gender of the athletic trainer in whom they were getting support from.

**Chapter Summary**

There has been a wide variety of research related to the investigation of whether a gender bias exists in the field of athletic training and the characteristics of those who have gender bias. The related research reviewed in this chapter consisted of a) the overall history and historical barriers of female athletic trainers; b) gender bias in athletic training; c) factors related to athlete perspective; d) comfort and satisfaction of athletic training services; and e) the social supportive role of athletic trainers. Chapter three will detail the methodology used for this study.
Chapter Three
Methodology

Introduction

The purpose of this study was to investigate whether a gender bias exists in the field of athletic training and the characteristics of those who have gender bias. This chapter will specifically go into the details of the methodology used, from the design, sample, instrument, procedures, and data analysis conducted.

Design

The researcher designed a quantitative research study to investigate the collegiate male athlete perspective of female athletic trainers. In order to make the most accurate assumptions about the problem being studied it was best to quantitatively organize the data from their study to gain the best information possible from the data analysis.

Sample

The participants in this study were male athletes from all sports offered at a Midwestern liberal arts college. They were from all grade levels, freshmen through seniors. The total number of participants was 136. There were roughly 400 athletes who were given the opportunity to participate in the study. See Figure 1 for the representation from each sport in this study.
Instrument

The instrument used in this study was a Google forms survey. See Appendix A for a copy of the consent statement and survey. This study was granted IRB exempt approval and a consent statement was provided to the participants to agree to before completing their survey responses. The questions were broken into two sections. The first section was composed of demographic questions and questions regarding athletic training services the athlete has experienced in the past. The second section went into the specifics of whether they have no preference or prefer a male athletic trainer to treat various injuries and conditions by responding on a Likert scale. The questions were meant to investigate which types of injuries male athletes prefer a certain gender to treat them and whether the demographic characteristics or background with athletic training services play a role in their preferences.

Procedures

Online surveys were emailed by the researcher to all of the college coaches of male sports. The link for the Google form survey was sent to all male athletes
currently on their team rosters. The athletes were assured that their responses to the survey would remain anonymous through the entire process and that their participation was voluntary, but highly recommended to help the Midwestern college athletic training staff in providing quality services.

**Data Analysis**

The data analysis performed for this study used a Chi-Square test. A Chi-Square test is useful when testing relationships between categorical variables. The Chi-Square statistic is based on whether there is a difference between what is actually observed in the data and what would be expected if there were not a relationship between the two variables (Statistical Solutions, 2018). For example, the Chi-Square contingency table analysis would be able to examine whether male athletes have no preference or prefer male athletic trainers to treat specific injuries and conditions and if that correlates to certain characteristics they have. The data was analyzed at the .10 significance level because this study had not been previously done and limited prior research could be found in the review of related literature.

**Chapter Summary**

This chapter went into the details of how this research was conducted and the methods behind it. The study is quantitatively designed, with a sample of male athletes from all sports at a Midwestern college. The data was collected through a Google forms anonymous survey and analyzed by a Chi-Square analysis. Chapter four will outline the results found in this study.
Chapter Four

Results

Introduction

The purpose of this study was to investigate whether a gender bias exists in the field of athletic training and the characteristics of those who have gender bias. The data in this study was analyzed using a Chi-Square test. A Chi-Square test is best used when determining if there is a relationship between categorical variables (Statistical Solutions, 2018). This chapter will specifically outline the results found in this study.

Procedures

First, the survey was given out to all male athletes at a Midwestern college and then returned surveys were scored by going through all 15 of the section two questions of the survey and calculating a score by adding up what number on the Likert scale they answered with for each question. The lowest score possible was a 15, which means the participant answered 1 for each question. Therefore, the highest score possible was 75, which means the participant answered a 5 for each question. The score of 45 was chosen to be the marker of where that athlete has no preference in whether they would want to be treated by a male or female athletic trainer. That being said, it was concluded that if an athlete scored above a 45 that meant they would prefer a male athletic trainer to treat their injuries. If the athlete scored a 45 or less it is assumed that athlete does not have a preference of male or female athletic trainers.
Data Analysis Findings

In terms of hypothesis one:

Hₐ: There is no correlation between year in college of male athletes and their perspective of female athletic trainers.

Hᵣ: There is a correlation between year in college of male athletes and their perspective of female athletic trainers.

The scores of athletes in this category were analyzed with observed (O) and expected (E) counts presented in Table 1 below.

Table 1. Chi-Square Contingency Table Data Set One:

<table>
<thead>
<tr>
<th></th>
<th>Freshman</th>
<th>Sophomore</th>
<th>Juniors</th>
<th>Seniors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>O</td>
<td>E</td>
<td>O</td>
<td>E</td>
</tr>
<tr>
<td>Score &lt; or = 45</td>
<td>32</td>
<td>29.41</td>
<td>31</td>
<td>27.94</td>
</tr>
<tr>
<td>Score &gt;45</td>
<td>8</td>
<td>10.59</td>
<td>7</td>
<td>10.06</td>
</tr>
</tbody>
</table>

Through the data analysis the Chi-Square Test found that with three degrees of freedom at the .10 significance level, one could reject null hypothesis one if the Chi-Square value is greater than 6.25. The data analysis found a chi-square value of 5.12. Thus null hypothesis one failed to reject the null hypothesis because there was not enough evidence available to reject the null at the .10 significance level.

In terms of hypothesis two:

Hₐ: There is no correlation between political affiliation of male athletes and their perspective of female athletic trainers.

Hᵣ: There is a correlation between political affiliation of male athletes and their perspective of female athletic trainers.
The scores of athletes in this category were analyzed with observed (O) and expected (E) counts are presented in Table 2 below.

Table 2. Chi-Square Contingency Table Data Set Two:

<table>
<thead>
<tr>
<th>Score &lt; or =45</th>
<th>Conservative</th>
<th>Liberal</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>51</td>
<td>49</td>
</tr>
<tr>
<td>E</td>
<td>51.85</td>
<td>48.15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Score &gt;45</th>
<th>Conservative</th>
<th>Liberal</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>19</td>
<td>16</td>
</tr>
<tr>
<td>E</td>
<td>18.15</td>
<td>16.85</td>
</tr>
</tbody>
</table>

Through the data analysis the Chi-Square Test found that with one degree of freedom at the .10 significance level, one could reject null hypothesis two if Chi-Square value is greater than 2.71. The data analysis found a chi-square value of .11. Thus null hypothesis two failed to reject the null hypothesis and the researcher concluded that not enough evidence was available to reject null hypothesis two at the .10 significance level.

In terms of hypothesis three:

H₀: There is no correlation between the gender from which the male athlete has received more athletic training services from in college and their perspective of female athletic trainers.

H₁: There is a correlation between the gender from which the male athlete has received more athletic training services from in the college and their perspective of female athletic trainers.

The scores of athletes in this category were analyzed with observed (O) and expected (E) counts are presented in Table 3 below.
Table 3. Chi-Square Contingency Table Data Set Three:

<table>
<thead>
<tr>
<th></th>
<th>More males</th>
<th>More female</th>
<th>Equal amount of both</th>
<th>Never used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score &lt; or =45</td>
<td>14</td>
<td>14.71</td>
<td>35</td>
<td>33.82</td>
</tr>
<tr>
<td>Score &gt;45</td>
<td>6</td>
<td>5.29</td>
<td>11</td>
<td>12.18</td>
</tr>
</tbody>
</table>

Through the data analysis the Chi-Square Test found that with three degrees of freedom at the .10 significance level, one could reject null hypothesis three if the chi-square was greater than 6.25. The data analysis found a Chi-Square value of .789. Thus null hypothesis three failed to reject the null hypothesis and concluded that not enough evidence available to reject the null hypothesis at the .10 significance level.

In terms of hypothesis four:

H<sub>0</sub>: There is no correlation between the sport(s) in which the male athlete participates in and their perspective of female athletic trainers.

H<sub>R</sub>: There is a correlation between the sport(s) in which the male athletes participate in and their perspective of female athletic trainers.

The scores of athletes in this category were analyzed with observed (O) and expected (E) counts are presented in Table 4 below.
Table 4. Chi-Square Contingency Table Data Set Four:

<table>
<thead>
<tr>
<th></th>
<th>BASE/SOC</th>
<th>FBALL/TRK</th>
<th>DIVE/SWIM</th>
<th>BASE</th>
<th>FBALL</th>
<th>SOC</th>
<th>BBA</th>
<th>LL</th>
<th>LA</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>E</td>
<td>O</td>
<td>E</td>
<td>O</td>
<td>E</td>
<td>O</td>
<td>E</td>
<td>O</td>
<td>O</td>
<td>E</td>
</tr>
<tr>
<td>Score &lt; or =45</td>
<td>1</td>
<td>.7 3</td>
<td>1</td>
<td>.7 3</td>
<td>1</td>
<td>.7 3</td>
<td>4</td>
<td>5. 82</td>
<td>15</td>
<td>16. 01</td>
</tr>
<tr>
<td>Score &gt;45</td>
<td>0</td>
<td>.2 7</td>
<td>0</td>
<td>1. 09</td>
<td>0</td>
<td>.2 7</td>
<td>4</td>
<td>2. 18</td>
<td>7</td>
<td>5. 9</td>
</tr>
</tbody>
</table>

Through the data analysis the Chi-Square Test found that with 13 degrees of freedom at the .10 significance level, one can reject null hypothesis four if Chi-Square is greater than 19.81. The data analysis found a Chi-Square value of 11.92. Thus null hypothesis four failed to reject the null hypothesis and the researcher concluded that not enough evidence was available to reject the null hypothesis at the .10 significance level.

In terms of hypothesis five:

H₀: There is no correlation between male athletes getting treated for gender-specific injuries and their perspective of female athletic trainers.

H₁: There is a correlation between male athletes getting treated for gender-specific injuries and their perspective of female athletic trainers.
The scores of athletes in this category were analyzed with observed (O) and expected (E) counts presented by Table 5 below.

Table 5. Chi-Square Contingency Table Data Set Five:

<table>
<thead>
<tr>
<th></th>
<th>No preference</th>
<th></th>
<th>Male preference</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>O</td>
<td>E</td>
<td>O</td>
<td>E</td>
</tr>
<tr>
<td>Score &lt; or =45</td>
<td>72</td>
<td>58.01</td>
<td>28</td>
<td>41.91</td>
</tr>
<tr>
<td>Score &gt;45</td>
<td>7</td>
<td>20.99</td>
<td>29</td>
<td>15.09</td>
</tr>
</tbody>
</table>

Through the data analysis the Chi-Square Test found that with 1 degree of freedom at the .10 significance level, one could reject null hypothesis five if Chi-Square value is greater than 2.71. The data analysis found a Chi-Square value of 30.12. Thus null hypothesis five was rejected and the researcher concluded that enough evidence was available to reject the null hypothesis at the .10 significance level.

**Chapter Summary**

A Chi-Square Test Contingency table analysis was used to analyze the collegiate male athlete perspective of female athletic trainers for hypotheses one through five. Based on the Chi-Square data analysis results, hypothesis one, two, three, and four failed to reject the null at the .10 significance level. However, hypothesis five was rejected at the .10 significance level. Chapter five will discuss the conclusions, implications, limitations, and recommendations for future research made.
Chapter Five

Conclusion

Background

The purpose of this study was to investigate whether a gender bias exists in the field of athletic training and the characteristics of those who have gender bias. This chapter will discuss the conclusions found in this study, the implications, limitations, and recommendations for future research.

Conclusions

After running a Chi-Square test to measure whether male athletes have no preference or prefer a male athletic trainer to treat specific injuries and conditions and if that correlates to certain characteristics they have; the researcher found in the analysis for the first hypothesis that there was no correlation between year in college of male athletes and their perspective of female athletic trainers. Regarding hypothesis two, it was concluded that there was no correlation between political affiliation of male athletes and their perspective of female athletic trainers. In regard to hypothesis three, it was concluded that there was no correlation between the gender from which the male athlete has received more athletic training services from in the college and their perspective of female athletic trainers. Similarly with hypothesis four, it was concluded that there was no correlation between the sport(s) in which the male athlete participates in and their perspective of female athletic trainers. However, in regard to hypothesis five there was a strong correlation between male athletes getting treated for gender-specific injuries and their perspective of female athletic trainers. These findings are consistent with the studies of McCurry (2010) and
Drummond (2007) who both found that male athletes feel more comfortable when provided care by a male athletic trainer for gender-specific injuries and conditions.

**Discussion of Implications**

The specific characteristics of male athletes such as year in school, political affiliation, the gender from which they have received more athletic training services in college, and the sport in which they participate had no correlation to their perspective of female athletic trainers. The data showed that those characteristics do not have significance in whether the participants had a preference for male athletic trainers or no preference at all. However, there was significance in the correlation between male athletes considering being treated for gender-specific injuries and their perspective of female athletic trainers, meaning that male athletes would prefer to be treated by a male athletic trainer for those injuries. Of the five hypotheses that were tested, the clearest conclusion that can be made is that male athletes would prefer to be treated for gender-specific injuries by an athletic trainer of their same gender. This information could help a female athletic trainer working with male athletes in knowing that specific preference and that all other characteristics tested did not hold significance in having a preference for male or female athletic trainers. Hopefully this information can help advance their confidence in feeling that male athletes more often than not usually do not have a preference in male or female athletic trainers other than when it comes to injuries that are specific to the male gender. The results indicated that male athletes would prefer a male athletic trainer for gender-specific injuries, and female athletic trainers could use this knowledge gained and develop strategies for ways on how to deal with these injuries. Having a conversation with their superior or
athletic director, depending on the setting in which they practice in, to find out what to do in such situations would be beneficial. Possibly, a training session on this topic with other female athletic trainers and how they deal with gender-specific injuries would be a good discussion to have. A possible solution for gender-specific athletic injuries for males who are not comfortable being examined by a female athletic trainer and if no male athletic trainers are present, would be to refer them to a local clinic or hospital where a male healthcare professional would be able to examine them.

**Limitations**

This study was limited to responses received from male athletes at the Midwestern College utilized for the study. Participation was voluntary and the number of responses received could not be controlled. Also, the researcher provided instructions to the coaches, who were the ones to provide the link to the survey to their athletes; however that does not necessarily mean they did what was asked of them. This could have led to fewer responses. Furthermore, all the questions were optional, meaning the researcher could not control which questions were and were not answered by each participant, and there was no opportunity to probe or ask clarifying questions.

**Recommendations for Future Research**

In the future, it would be beneficial to investigate further why male athletes in general do not have a preference in female or male athletic trainers. From this study, we know how male athletes perceive female athletic trainers, but understanding why they feel that way would provide female athletic trainers with more information on
how they can make their athletes feel more comfortable and provide the absolute best care possible. As for hypothesis five, the researcher would be able to find out why male athletes prefer to be treated by a male athletic trainer for gender-specific injuries by including short answer questions or interviews. The correlation was so strong between male athletes getting treated for gender-specific injuries and their perspective of female athletic trainers that it would be interesting to discover exactly why they would prefer a male athletic trainer. Possibly it is due to the sensitive nature of the injury, however having a short answer or interview section of the research study may provide different reasoning. Maybe if that information were further investigated, the barriers which female athletic trainers experience in the field of athletic training could be diminished and female athletic trainers can provide more quality care. Furthermore, including collegiate female athletes would provide interesting insight into whether the results would change and if their perspective of female athletic trainers would differ from collegiate male athletes. Another recommendation would be to investigate different college division levels or even high school athletes and find out whether their perspective changed of female athletic trainers. Seeing if the lack of maturity that may exist in high school male athletes may provide significant results. Both pieces of data would provide female athletic trainers more knowledge and better preparation in treating female athletes and different division level athletes. Lastly, investigating how female athletic trainers believe male athletes perceive them and seeing if their perception coincides with the male athletes perception would be interesting to research.
Finals Thoughts

The purpose of this study was to investigate whether a gender bias exists in the field of athletic training and to identify the characteristics of those who have gender bias. After completing this study, the results suggest that while in most of the athletes’ preferences, a gender bias does not exist in the field of athletic training and there is no significance in the characteristics of the male athletes in order to draw any other conclusions, other than that male athletes do prefer to be treated by a male athletic trainer for gender-specific injuries. According to existing research, this preference seems to be typical across all levels of athletics.
List of References


Title IX and Sex Discrimination. (2015). U.S. Department of Education. Retrieved from [https://www2.ed.gov/about/offices/list/ocr/docs/tix_dis.html](https://www2.ed.gov/about/offices/list/ocr/docs/tix_dis.html)


Appendix A.

Collegiate Male Athlete Perspective of Female Athletic Trainers Questionnaire

Online Survey Consent Statement

You are being invited to participate in a research study titled “The Collegiate Male Athlete Perspective of Female Athletic Trainers”. You were selected to participate in this study because you are a collegiate male athlete at Carthage College that is on an NCAA Division III athletic team.

The purpose of this research study is to investigate whether a gender bias exists in the field of athletic training and the characteristics of those who have gender bias. If you agree to take part in this study, you will be asked to complete an online survey/questionnaire. This survey/questionnaire will ask about your background, experiences with athletic trainers, and what gender athletic trainer you would prefer for various injuries and it will take you approximately five minutes to complete.

We believe there are no risks associated with this research study. We have minimized any risk of loss of privacy by making the form anonymous. Your responses will be stored in secure computer files. Only the principal and student investigator will have access to these files. Please note that you may decline to answer any question on the survey.

There are no benefits to you by participating in this study. Rather, your answers to this questionnaire will help to learn more about whether male student athletes prefer a certain gender athletic trainer to take care of their injuries and if there may be a reason for these preferences.
Your participation in this study is completely voluntary and you can withdraw at any time without adversely affecting your relationship with anyone at Carthage College.

If you have questions about this project or if you have a research-related problem, you may contact the student investigator, Allie Samaan at asamaan@carthage.edu or the primary investigator, Patricia Rieman at prieman@carthage.edu.

Please complete the first question below and feel free to print a copy of this page to keep in your records.
Top of Form

By clicking "I agree" you are indicating that you are at least 18 years old, have read and understood this consent statement and agree to participate in this research study.*

- I agree
- I do not agree

Current Age:

- 18
- 19
- 20
- 21
- 22
- 23
- Other

Year in College:

- Freshman
- Sophomore
- Junior
- Senior

Race/Ethnicity:

- White
- African American
- Hispanic
- Asian
- Native American
- Other

What college sport(s) do you participate in?

- Football
- Basketball
- Volleyball
- Soccer
- Baseball
- Swimming
- Diving
- Lacrosse
- Tennis
- Track and Field
- Cross Country
- Golf

What is your political affiliation on social issues? ex. social issues like, gender equality in the workplace, same sex marriage etc.

- Conservative
- Liberal

Are you a religious person?

- Yes
- No
If answered yes to the previous question, what religion do you practice?

- Catholic
- Christian
- Lutheran
- Judaism
- Islam
- Baptist
- Other:

What gender is your primary care physician?

- Female
- Male

Who mainly raised you growing up?

- Both a male and a female
- Only a male(s)
- Only a female(s)

Did your high school offer athletic training services by certified athletic trainers?

- Yes
- No

If answered yes to the previous questions, were athletic training services provided by:

- a male athletic trainer
- a female athletic trainer
- both male and female athletic trainers
- I never utilized them, so I would not know

How often did you use athletic training services in high school? examples: rehab, taping, injury evaluation, wound care etc.

1 2 3 4 5

never all four years

How often do you use athletic training services in college? examples: rehab, taping, injury evaluation, wound care etc.

1 2 3 4 5

never everyday

Overall, what gender have you received more athletic training services from in college?

- Male athletic trainers
- Female athletic trainers
- Equal amount of both
- I have never utilized them, so I would not know
Overall, have your experiences been positive with female athletic trainers?
- Yes
- No
- I have never utilized a female athletic trainer, so I wouldn't know

Overall, have your experiences been positive with male athletic trainers?
- Yes
- No
- I never utilized a male athletic trainer, so I wouldn't know

Section 2: Choose the response that is most true for you and your feelings

In general, if I had a choice I would feel more comfortable receiving athletic training services from a male over a female athletic trainer

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>strongly disagree</td>
<td></td>
<td></td>
<td></td>
<td>strongly agree</td>
</tr>
</tbody>
</table>

Specifically, for head or neck injuries, I would prefer a male athletic trainer to treat me over a female athletic trainer

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>strongly disagree</td>
<td></td>
<td></td>
<td></td>
<td>strongly agree</td>
</tr>
</tbody>
</table>

Specifically, for back injuries, I would prefer a male athletic trainer to treat me over a female athletic trainer

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>strongly disagree</td>
<td></td>
<td></td>
<td></td>
<td>strongly agree</td>
</tr>
</tbody>
</table>
Specifically for shoulder injuries, I would prefer a male athletic trainer to treat me over a female athletic trainer

| Strongly disagree | | Strongly agree |

Specifically for arm, forearm, and wrist injuries, I would prefer a male athletic trainer to treat me over a female athletic trainer

| Strongly disagree | | Strongly agree |

Specifically for hip injuries, I would prefer a male athletic trainer to treat me over a female athletic trainer

| Strongly disagree | | Strongly agree |

Specifically for groin injuries, I would prefer a male athletic trainer to treat me over a female athletic trainer

| Strongly disagree | | Strongly agree |

Specifically for knee injuries, I would prefer a male athletic trainer to treat me over a female athletic trainer

| Strongly disagree | | Strongly agree |
Specifically for lower leg injuries, I would prefer a male athletic trainer to treat me over a female athletic trainer

1 2 3 4 5

strongly disagree | strongly agree

Specifically for ankle and foot injuries, I would prefer a male athletic trainer to treat me over a female athletic trainer

1 2 3 4 5

strongly disagree | strongly agree

Specifically for abdominal injuries, I would prefer a male athletic trainer to treat me over a female athletic trainer

1 2 3 4 5

strongly disagree | strongly agree

Specifically for chest injuries, I would prefer a male athletic trainer to treat me over a female athletic trainer

1 2 3 4 5

strongly disagree | strongly agree

Specifically for testicle injuries, I would prefer a male athletic trainer to treat me over a female athletic trainer

1 2 3 4 5

strongly disagree | strongly agree
Specifically if I had a concern with an eating disorder, I would prefer a male athletic trainer to treat me over a female athletic trainer

1 2 3 4 5

strongly disagree | | strongly agree

Specifically if I had a concern with sexually transmitted disease, I would prefer a male athletic trainer to treat me over a female athletic trainer

1 2 3 4 5

strongly disagree | | strongly agree