

Journal of Sports Medicine and Allied Health Sciences: Official Journal of the Ohio Athletic Trainers Association

Volume 5 | Issue 3

Article 3

Student Athlete Perceptions of Athletic Trainers' Competence Based on Appearance and Dress

Jennifer J. Rogers

University of Iowa, jennifer-j-rogers@uiowa.edu

Follow this and additional works at: <https://scholarworks.bgsu.edu/jsmahs>



Part of the [Biomechanics Commons](#), [Exercise Science Commons](#), [Motor Control Commons](#), [Other Kinesiology Commons](#), [Rehabilitation and Therapy Commons](#), [Sports Medicine Commons](#), and the [Sports Sciences Commons](#)

Recommended Citation

Rogers, Jennifer J. () "Student Athlete Perceptions of Athletic Trainers' Competence Based on Appearance and Dress," *Journal of Sports Medicine and Allied Health Sciences: Official Journal of the Ohio Athletic Trainers Association*: Vol. 5 : Iss. 3 , Article 3.

DOI: 10.25035/jsmahs.05.03.03

Available at: <https://scholarworks.bgsu.edu/jsmahs/vol5/iss3/3>

This Article is brought to you for free and open access by the Journals at ScholarWorks@BGSU. It has been accepted for inclusion in Journal of Sports Medicine and Allied Health Sciences: Official Journal of the Ohio Athletic Trainers Association by an authorized editor of ScholarWorks@BGSU.

Student Athlete Perceptions of Athletic Trainers' Competence Based on Appearance and Dress

Jennifer J. Rogers, PhD, ATC, LAT
University of Iowa

Context: Physical appearance and dress attire may be a major influence on a person's perception of an individual's professional competence. **Objective:** To examine influence of Athletic Trainer (AT) physical appearance and dress attire on student-athletes' perception of an AT's competence. **Design:** Cross-Sectional Study **Setting:** NATA District 5 Participants: Student athletes (n=156; female: n=71; male: n=78) from NCAA Division III and NAIA institutions participated in the study. **Interventions:** Participants viewed one of four Body Mass Index (BMI) specific AT images [underweight BMI=18, normal weight BMI=24, overweight BMI=30, or an obese BMI=36] while answering 36 Student Athlete Response (SAR) From survey questions regarding professional competence. AT specific images alternated between a male or female and dressed in either business casual or athletic attire. Participants completed eight behavioral characteristics derived from 5th edition of the Athletic Training Education Competencies by selecting an optimal BMI from a silhouette scale. **Main Outcome Measures:** ANOVA and post hoc analyzed SAR Form data. Composite sub-scores were calculated for AT dress (business casual and athletic attire) and gender (male and female). Independent t-test measured silhouette scale data. **Results:** A significant main effect was found for AT BMI [F (3, 152)=6.2, p n²=.9355]. A post-hoc test revealed obese BMI (139.55 ±25.9; 95% CI=131.25, 147.85), differed significantly (p < .05) in composite SAR mean score from underweight (159.19 ± 15; 95% CI=154.18, 164.20) and normal weight (153.26 ± 17.5; 95% CI=147.86, 158.65) AT BMI categories. A significant main effect was found for AT dress [F (1, 154)=27.74, p <.001]. **Conclusions:** Student-athletes perceive a relationship between an AT's physical appearance and professional competence. More specifically, student-athletes perceived both an AT that was normal and underweight as well as an AT that was dressed in business attire as more competent than the alternatives. **Keywords:** *Competence, Body mass index, Dress, Appearance, Perception*

INTRODUCTION

As allied health care professionals, Athletic Trainers' (ATs) collaborate with physicians to optimize physical activity of patients and clients.^{1,2} Traditionally, ATs focus on the prevention, diagnosis, and intervention of medical conditions involving injuries and illness^{1,2} of athletic populations specifically at the college and university setting.³⁻⁵ Providing health care for athletes involves developing a rapport that is cultivated through informal communication during various times throughout a season, school year, or athletic career. Building rapport is imperative when building relationships.⁶ However, as reported by nurses, primary care physicians, sport dietitians and psychologists,

the first impression precedes building rapport with patients.⁷⁻⁹

The development of a first impression based on physical appearance and dress attire can be used to infer health status and professional competence of another individual.¹⁰ In this study physical appearance will refer to the relative shape and weight distribution of the body as defined by the body mass index.¹¹ Dress attire will be defined as clothing and other adornments used to modify the body.¹¹ More specifically, the dress style of "business-casual attire" will be defined as "shirts, slacks, skirts and blouses (no jeans or shorts),"¹² while the term "athletic attire" will be defined as a warm-up collared jacket and pants.⁹ The last term to be defined to provide context for

this study is professional healthcare competence which is the “proficiency in the application of the arts and sciences of healing.”¹³ This type of competence requires an individual to perform skills equal to standards set by his or her profession, as well as requiring the ability to communicate, serve others, empathize, and use good judgment.¹³

When people first meet, a first impression is automatically and unconsciously made through the recalling of cultural and learned stereotypes.¹⁴ Various stereotypes exist regarding body type of an individual as well as the type of clothing worn.¹⁵⁻²⁰ The research referring to body type indicates that overweight and obese individuals are perceived as being lazy, sloppy, physically unhealthy, unattractive, and unintelligent.^{16,17,19,21-25} In contrast, muscular individuals are perceived as hard-working, clean, self-confident, attractive, extroverted, physically healthy, and smart.^{17,19,21-25} Lean individuals are associated with positive attributes such as being agreeable, intelligent, mature, unselfish, youthful, and more ambitious.^{15,19,24,26} In contrast, other studies found more derogatory associations with lean body types: perceptions of insecurity, stubbornness, suspicion of others, weakness, and nervousness.^{15,19,24,26}

First impressions of physical appearance²⁷⁻²⁹ can be positive or negative³⁰ depending on grooming, body type, and clothing. Chu and Geary³¹ stated first impressions and snap judgments are often made on the basis of visual perception. These snap judgments can lead to a perception of competence^{8-10,32,33} and trustworthiness^{7,34} in an individual. Lovell et. al.^{8,9} and Lubker et. al.^{32,33} found athletes correlated the professional effectiveness of sport dietitians, sport psychologists, and counselors with physical appearance. Lovell et. al.⁸ specifically stated if the client’s initial judgments of a Sport Psychology Consultant based on dress and BMI are negative, the development of effective therapeutic relationships between the client

and the practitioner is likely to be compromised, at least initially, no matter the practitioner’s expertise or knowledge.

As ATs interact with student athletes routinely in colleges and universities,³⁵ there is an expectation of proficiency in applying the art and science of healing.¹³ However there is a gap in the literature to identify student athletes’ expectations or perceptions of ATs, specifically related to physical appearance and dress attire. This gap is illustrated by the fact that the most recent studies were published prior to 2012. This study was multi-purposed: first to determine student athletes’ perception of AT competence based on AT’s body type, and second was to examine student athletes’ perceptions of AT competence based on dress attire. It was hypothesized that student athletes would perceive a normal weight AT as more competent than an obese AT. In addition, it was postulated that student athletes’ perception of AT professional competence would be inversely related to AT body type or more specifically, Body Mass Index (BMI, kg/m²). Finally, it was hypothesized that student athletes would perceive an AT as more competent if business casual attire was worn versus athletic attire.

METHODS

Research Design

A cross-sectional survey of collegiate student athletes was conducted. The electronic survey asked student athletes to rank their perceived satisfaction of an AT’s professional competence when viewing an image of an AT. The images were either underweight, normal weight, overweight or obese. The survey also captured data on the student athlete’s perception of professional competence based on dress attire of the AT, either business casual or athletic attire.

Participants

A total of 26 college and universities representing 6 states agreed to participate. Student athletes (n=156) ages 18-22 (20±1.6

years) participated in the study. Gender distribution consisted of males (n=78: age: 20 ± 1.4 years) and females (n=71: age: 20 ± 1.3 years). Criteria for inclusion required participants to be on an athletic team roster and over the age of 18. There were no exclusion criteria for this study. Institutional Review Board approval was attained prior to conducting the research. All participants consented prior to participation.

Instrument

The survey consisted of three parts: 1) demographics, 2) Student Athlete Response (SAR) Form, and 3) BMI Silhouette Scale. The first part of the survey collected demographic information. Participants were asked to report their gender, age, race, height, weight, location of residence (i.e., South Dakota, North Dakota, Oklahoma, Nebraska, Iowa, Missouri, Kansas), and their sport(s) of participation.

Student Athlete Response (SAR)

The SAR Form consisted of 36 questions and was used to identify student athletes' expectations and perceptions of an AT. Questions posed in the SAR Form were created and validated by Dr. Scott Unruh.^{36,37} The questions addressed the perception of professional competence by reflecting the knowledge, skills, and abilities of an AT as outlined in the Role Delineation Study;³⁸ thus, the SAR Form questions encompass the core knowledge and skills expected of an AT. Permission was granted prior to the utilization and modification of the SAR Form.

For further reference, appearance or body type will refer to the relative shape and weight distribution of the body as defined by BMI = mass in kilograms divided by height in meters squared ($\text{kg} \cdot \text{m}^{-2}$).³⁹ Four BMI classifications were used to categorize AT's body type: underweight ($\text{UW} < 18.5 \text{ kg} \cdot \text{m}^{-2}$), normal weight ($\text{NW} = 18.5\text{-}24.9 \text{ kg} \cdot \text{m}^{-2}$), overweight ($\text{OW} = 25\text{-}29.9 \text{ kg} \cdot \text{m}^{-2}$), or obese ($\text{OB} \geq 30 \text{ kg} \cdot \text{m}^{-2}$).^{39,40} These specifications were used to create each of the BMI-specific AT images within the SAR Form. An image of an AT in

either business or athletic attire and of only one of the BMIs (UW, NW, OW, or OB) was displayed on each survey page.

Each of twelve survey pages had three questions regarding the image. The BMI of the AT displayed determined the category of survey (either UW, NW, OW, or OB). Student athletes responded to each question using a Likert scale ranging from 5 (very satisfied) to 1 (very dissatisfied) while referring to the AT image pictured at the top of the page. The highest possible SAR composite score equaled 180, meaning the student athlete perceived that the AT pictured was deemed highly competent. Hence the lowest possible overall score equaled 36, meaning the AT pictured was perceived to be incompetent.

An example of a question on the SAR Form was 'I expect to be ___ with this AT's overall competence and knowledge.' If the participant was given the NW BMI-specific survey, they were presented with this question and two others while referring to an AT image that was NW as shown in Figure 1. The AT images differed within the same survey only in dress and gender and the BMI of the AT image remained the same throughout the entire survey. The images were shown in succession of male business casual, female business casual, male athletic attire, and female athletic attire. Each of the images in Figure 1 were shown three times throughout the survey. The order and proportion of images with regards to dress and gender were presented the same across all four surveys. The images seen in Figure 2 were created to represent ATs encountered in a college or university athletic training clinic. The participants did not have the benefit of seeing all of the BMI differing images to compare them. Faces were obscured so that the participants focused on appearance and dress of the AT.



Figure 1. Normal weight SAR Form survey images: Male and Female Business Attire Dress and Male and Female Athletic Attire Dress.



Obese (OB)



Overweight (OW)



Normal Weight (NW)



Underweight (UW)

Figure 2. The male and female business casual and athletic attire images shown in separate SAR Form surveys (from left to right): Obese (OB), Overweight (OW), Normal weight (NW), Underweight (UW).

BMI-Based Silhouette Scale. This part of the survey also used BMI³⁹ to classify four gender specific silhouette images. The BMI-based silhouette images were placed along a BMI scale from 14 to 40 as seen in Figure 3. The silhouette images were strategically placed directly above specific BMI scores of 18, 24, 30 and 36 (Figure 3).⁴¹ The gender-specific

silhouette scales were shown separately with eight behavior statements. These statements were derived from the “Foundational Behaviors of Professional Practice” specified by the 5th edition of the Athletic Training Education Competencies.⁴²

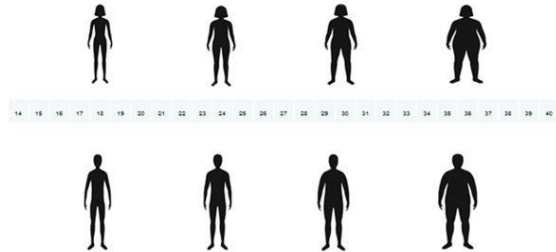


Figure 3. Standard figural stimuli reprinted with permission from Peterson et al.⁴² Body Mass Index Silhouettes: UW=18, NW=24, OW=30, OB=34.⁴⁰

Student athletes were then instructed to ‘check the box’ that corresponded with the BMI that was perceived to: provide the best health care; be the best advocate for athletes’ needs; be the best at effecting positive patient outcomes; be the best at preventing injury and promoting health; be the best at caring for acute injury and illness; be the best at initiating referrals to other allied health care professionals when appropriate; be the best at respecting the rights, welfare, and dignity of all individuals; and lastly, be the best at exhibiting healthy lifestyle habits.

The BMI Silhouette Scale data is important to this particular study because rather than student athletes being shown a picture and then asked for their perception of the imaged AT, the BMI Silhouette Scale asked the student athletes to choose which BMI would be perceived as the most competent at a particular behavior or skill; thus, providing some internal validity to the entire survey. The BMI-based Silhouette Scale was used with permission granted by Peterson et al.^{41,43}

Procedures

Participants were solicited by their home institution’s AT via email to complete an electronic survey. A link to Qualtrics® was provided in the email that directed them towards one of the four BMI-specific surveys

(underweight =UW, normal weight =NW, overweight=OW, or obese= OB). The survey was open for approximately two months. After the initial email to the home institution's AT, one reminder email was sent approximately three weeks later requesting ATs to email student athletes on their team rosters to solicit participation.

Participants were not given definitions of any terms. A consent form was at the beginning of the questionnaire and consent was assumed if the participant proceeded with taking and completing the survey. For equal distribution of each BMI-specific survey, the four surveys were systematically distributed depending on the timing of participation. The first athlete to respond to the request of the participation email was given the UW BMI-specific survey, the second athlete was given the NW BMI-specific survey and so on, then the cycle was repeated. This method was chosen to provide a random sampling of the population while also limiting the unequal distribution of each of the four surveys. The participant was unaware which survey he or she was given. The participant was asked to answer the questions as honestly as possible.

Data Analysis

SPSS (version 18.0, SPSS Inc., Chicago, IL) was used to analyze the data. An effect size was calculated using Cohen's Statistical Power Analysis.⁴⁴ It was determined a moderate effect size ($d = .50$) and an alpha of .05 (or significance criterion), with a power = .97 was appropriate for this research, therefore requiring 120 responses.⁴⁴ Since each SAR Form was BMI specific, an overall composite score of the four surveys were compared using an Analysis of Variance (ANOVA). The Scheffe post-hoc test was performed to further explore the significant differences between the composite mean scores. Spearman correlation coefficient analysis was also performed to determine if a statistical relationship existed between composite SAR scores and a representative BMI (16.5, 22, 27.5, and 33 kg·m⁻²) of the four different BMI-

specific categories (UW, NW, OW, OB). The SAR Form scores were then divided into subscale composite scores based on the dependent variables of AT dress (business casual and athletic attire) and AT gender (male and female). These subscale composite scores were analyzed using a one-way ANOVA. The BMI Silhouette Scale data was analyzed using an independent t-test to determine if there was a perceived ideal male and female BMI of an AT to perform specific tasks of competency.

RESULTS

Approximately 11,150 student athletes were solicited to participate in this study. A total of 156 student athletes completed the survey, which met the predetermined number of subjects as set by a priori power analysis. The surveys were evenly distributed as 37 student athletes completed the UW survey, 43 completed the NW survey, 36 completed the OW survey, and 40 completed the OB survey.

Demographics

More than 94% of the participants were Caucasian and the majority (more than 91%) were from the states of South Dakota, Nebraska, Iowa, and Missouri. The student athletes were also grouped into 1 of the 4 BMI categories: UW, NW, OW, and OB. Each student athlete's BMI was calculated from their self-reported demographic information. The majority (61%) of the respondents were of normal weight ($n=95$), 16% of the athletes were classified as overweight ($n=25$), and the remaining 18% were classified as obese ($n=28$). Eight of the 156 participants chose not to report their height and weight and thus not included in the BMI classification. None of the respondents who reported their height and weight were classified as underweight.

Perceived AT Competence Based on AT's BMI

Does an AT's body type impact a student athlete's perception of AT's competence? When identifying differences of student athlete perception of AT competence among

four categories of ATs, based on BMI; a significant main effect was found for AT BMI [F (3, 152) = 6.2, p <.001, η^2 = .9355]. The Scheffe post hoc test revealed AT BMI category of obese (139.55 ± 25.9; 95% CI = 131.25, 147.85) differed significantly (p < .05) in composite SAR mean score from UW (159.19 ± 15.02; 95% CI = 154.18, 164.20) and NW (153.26 ± 17.53; 95% CI = 147.86, 158.65) AT BMI categories (Figure 4). There were no significant differences between other BMI categories. The primary hypothesis that student athletes perceived a normal weight AT as more competent than an obese AT was statistically supported.

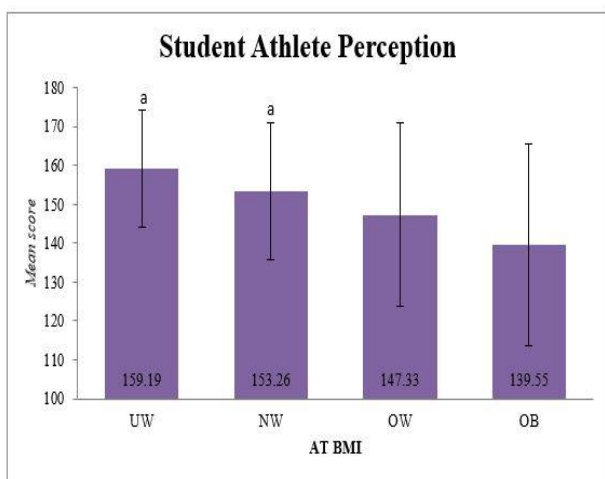


Figure 4. Student Athlete Perception
Student Athlete Response (SAR) Form mean (+ SD) composite scores. These mean scores represent the student athlete's perception of AT competence based on AT appearance (UW, NW, OW, OB). a: Significantly different from OB survey mean (p < .05).

The second research hypothesis stated student athletes' perception of AT competence was inversely related to AT BMI. Upon examination of scatterplot (Figure 5) for the SAR Composite Score and AT BMI, it appeared that a data point was a potential outlier. The Outlier Labeling Rule⁴⁵ was used to identify the potential outlier in the following variable: SAR Composite Score. One outlier met the criteria of the Outlier Labelling Rule⁴⁵ (2.2 times the interquartile range subtracted from the first quartile of the data set) and was removed. A Spearman Correlation Coefficient indicated a weak inverse relationship ($r = -0.302$, p <0.01)

between the perceived competence and BMI of the AT portrayed in the surveys. The BMI of the athlete had no statistical correlation with the BMI of the AT imaged in the survey.

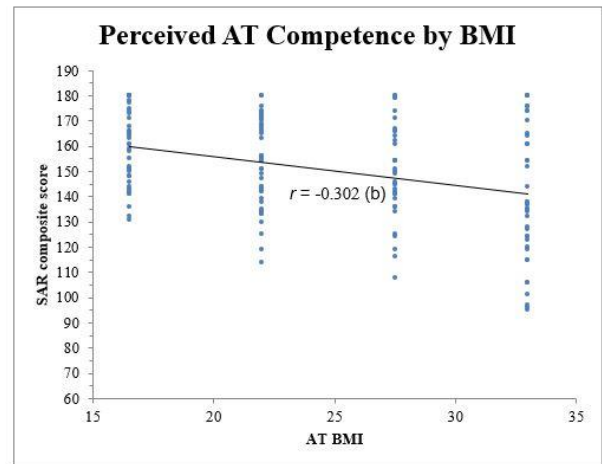


Figure 5. Perceived AT Competence by BMI
Relationship between SAR composite score (representing perceived AT competence) and each AT BMI category: UW = 16.5 kg·m⁻², NW = 22 kg·m⁻², OW = 27.5 kg·m⁻², and OB = 33 kg·m⁻². Solid line represents the inverse relationship. b: Spearman rank correlation coefficient value significant at the < .01 level

Perceived AT Competence Based on AT's Dress Attire

Does the way an AT dress impact the student athlete's perception of AT's competence? When examining the differences between student athlete perception of AT competence based on AT dress; a significant main effect was found with a moderate effect size [F (1, 154) = 27.74, p <.001, $f = .153$]. The findings suggest business casual attire was perceived as more competent than athletic attire dress [77.41 ± 11.55; 72.72 ± 12.73, p < .01]. Figure 6 demonstrates the finding in graphical form revealing the subtotal business casual dress score was significantly higher than the subtotal athletic attire dress score.

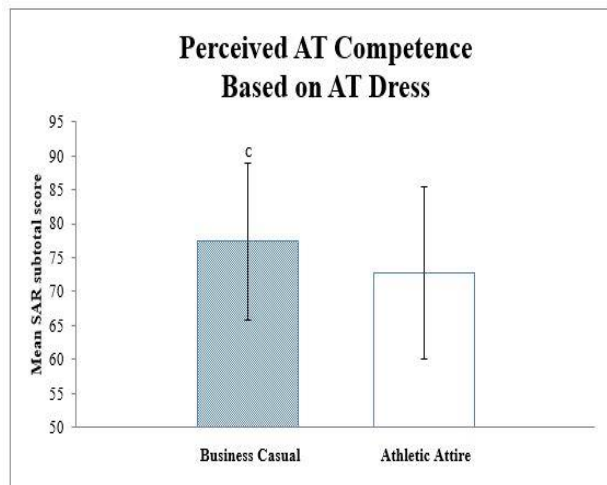


Figure 6. Perceived AT Competence Based on AT Dress

Student athlete's perception of AT competence based on AT dress. The higher score indicates more competence was perceived. Values are means \pm SD. c: SAR business casual sub-category scores were significantly different from SAR athletic attire sub-category scores ($p < .05$).

BMI Silhouette Scale Analysis

Does an ideal BMI exist for an AT to be perceived as competent? Due to the constraints of the electronic survey and the distribution to participants, the BMI Silhouette Scale data was analyzed using repeated independent t-tests. The overall mean female AT's BMI (25.13 ± 4.2) significantly less than the overall mean male AT BMI (26.04 ± 3.8) resulted in a significant difference ($p < .001$). Each of the eight behavior categories were analyzed separately. The behavior category that asked student athletes to "choose the AT who best exhibits healthy lifestyle habits" resulted in the female BMI (23.92 ± 4.3) being significantly lower ($p < .01$) than the male BMI (25.04 ± 3.8).

DISCUSSION

This research indicates student athletes perceive a relationship between an AT's competence and physical appearance. More specifically, student athletes perceived normal weight and underweight ATs as well as professionally dressed ATs as more competent than the alternatives. Modeling healthy behaviors has been identified as important in medical professions.⁴⁶⁻⁴⁸ Specifically, a physically fit individual who is

perceived to demonstrate self-care, with particular regard for their physical appearance, provides an example of the type of care that will be given to his or her patients.^{49,50} If, like other medical professionals, ATs want to be perceived by their patients as competent, it may benefit them to model healthy behaviors.

Unfortunately, reports of the health and fitness of the general population in the United States have found that two-thirds of the population is overweight or obese.⁵¹ Groth et al.⁵² conducted research regarding AT self-reported health and fitness habits and found that ATs' health and fitness behaviors are similar to the general population. If ATs are in concert with the general population regarding obesity and fitness behaviors, it is possible that patients perceive a lack of competence and could have doubts about the service that can be provided.

Again this study statistically supported the findings that normal weight and underweight individuals are perceived as more competent than the alternative. As well as an AT that wore business casual dress attire was perceived as more competent than an AT wearing athletic attire. Even though student athletes may try not to make judgments about people based on physical appearance, they felt that their ideal image of an AT is someone looking professional and physically fit. How this first impression is verbally or non-verbally expressed by the student athlete is beyond the scope of this paper.

Most student athletes may correlate competence with the knowledge the AT has and how that knowledge is communicated. There is a myriad of personal characteristics that can be used to explain competence of an AT, however as reported in other research trust is essential in building a relationship between a patient and healthcare provider.^{4,5,7,34} This trust is based on a relationship between the student athlete and the AT, not appearance. So looking the part is important when making a first impression,

but other personal characteristics and how the AT builds trust is more important for building a relationship.^{4,5} The gap that this evidence presents is what happens between an individual's first impression and the relationship building that needs to take place between patient and healthcare provider. Will there be an unneeded or unwanted obstacle to overcome if the first impression is not favorable and in alignment with the AT's competence? What can an AT do to ensure that their professional relationship with their patient starts off well? These questions are all interesting, however the scope of this research focused on first impression which can be influenced by an individual's appearance and was supported by previous research.^{11,49}

Professional Recommendations

The following insights and recommendations are made in light of the findings of this study. The professional emphasis of ATs is to protect and care for the well-being of physically active individuals. This is evident by the code of ethics, the educational competencies,^{42,53} as well as slogans like "Your protection is our priority."¹ This research brings to light a perspective that might need more focus. As professionals, how ATs treat their own health and physical wellness could be perceived as a reflection of how they will treat their patients. Therefore it is important for athletic trainers to model as well as promote health and safety. Self-care can incorporate healthy eating habits amidst busy lifestyles and exercising twenty to thirty minutes a day, at least three to five times a week.^{54,55} Ultimately, the point is promoting self-care so that ATs can perform their jobs to their highest potential. Along with promoting health lifestyle habits it appears that dress also makes a difference in the perception of competence. The professional degree change and seeking to be known as colleagues of doctors, nurses, physical therapists, physician assistants, and other allied health care professionals can be improved as well by dressing like these professionals. Requiring a dress code within

the facility that ATs work is recommended. Again, if ATs want the same respect received by other health professionals, ATs need to look the part of a health care professional. This not only will assist in the perception of the profession from patients, but also from other health profession colleagues.

The following recommendations are made to assist athletic training program directors and clinical education coordinators to improve their student's transition to practice. First, athletic training programs could implement curricular behavioral outcomes specific to personal health, fitness, and professional dress. Educational components could be incorporated in courses such as nutrition or psychosocial. Educators should emphasize and model self-care by measuring behaviors that focus on healthy lifestyle choices, not body type or body composition. Educators would encourage students to embrace the fact that individuals are all different shapes and sizes, however our knowledge about wellness promotion should be translated into our own behaviors. Secondly, athletic training programs could establish wellness challenges for students. Many companies provide benefits to employees that participate in programs provided by their company, institution, or community.^{56,57} These challenges could be promoted via a course(s), a student club, the athletic training program faculty and preceptors.

Currently AT programmatic curriculums require cognitive knowledge and behavioral outcomes of prevention, recognition, and management of illnesses and injuries. With the results of this research, it appears that athletic training programs would benefit from adding curricular behavioral outcomes that highlight personal behaviors congruent with the knowledge gained to provide health care services to patients. Precedent for this recommendation is found in other allied health care professions. One group of researchers created a lifestyle curriculum model that was developed for medical

schools.⁵⁸ This medical program had their student's assess their own nutrition and exercise.⁵⁸ From that assessment, generic skills were developed in the context of lifestyle.⁵⁸ Then evaluations were performed by faculty and students, which included assessing the impact these generic skills made on knowledge, skills, and personal lifestyle.⁵⁸ Another example is a nursing program that had their students complete a Health Risk Assessment Form.⁵⁹ In light of the students' responses, the researchers found a link between self-concept and health behaviors. Horneffer^{59,60} suggested the importance of finding ways to encourage the development of health-related self-concepts as part of their courses. Programs in AT could make the same type of adjustments, in light of these studies and other research that indicated that medical schools and nursing programs saw improvement in lifestyle behaviors by emphasizing and promoting personal health of their students within their curriculums.⁵⁹⁻⁶¹

Even though the history of the athletic training profession is deeply seated in physical education and kinesiology,⁶²⁻⁶⁶ the current movement of the profession is in the direction of emphasizing an increase in knowledge specifically in the content of general medicine.⁴² Differing opinions on the physical and ideological location of athletic training programs have been voiced.^{67,68} Either way, in this transition of the professional degree, athletic training educators have a unique opportunity to emphasize physical fitness and healthy lifestyle behaviors within a medical model, along with our interprofessional colleagues of nurses and physicians.

LIMITATIONS

This study is the first known to analyze perceptions of AT competence in relationship to physical appearance. The small sample size, due to the low response rate was the primary limitation of the study. However, the power of analysis indicated that this sample size was

adequate. The low response rate could have been due to the length of the survey or the topic of inquiry. Poor response rate could inhibit generalizing the research results. In addition, the region of inquiry was only seven states and some of those states were not well represented by the respondents in their demographics. Access to student athletes in these areas was a limitation.

The demographics of race was also a limitation. The participants were very homogeneous in race as well as the survey images were all Caucasian. Further research should address diversity of respondents and images for generalizability of results. Finally, as with all surveys, researchers rely on honesty from the participant when answering questions.⁶⁹ According to Portney and Watkins for variables such as "perceptions and attitudes, self-report is the only direct way to obtain information."⁶⁹ Therefore this limitation is unavoidable for this type of research.

FUTURE RESEARCH

A few topics could be addressed in future research. This study should be replicated to indicate clinical significance. Regarding the topic specific to body type, a replication of this study should target the population of student athletes in sports that are dependent on body composition for participation or are weight-sensitive.⁷⁰ Perceptions of student athletes' in weight sensitive sports, like wrestling and gymnastics, may be influenced by the expectations placed upon them. Another focus could investigate the reason for underweight ATs being perceived as competent, specifically the female gender as was found in the silhouette scale data analysis. Further investigation could also help identify if dress of an AT in different athletic training clinical settings (i.e. indoor sport, outdoor sport, clinic) influences a patient's perception of competence. A larger sample size should be used as well as a survey focusing solely on dress.

Future research could also explore the demographic variable of level of competition (i.e., NCAA Division I, II, III, or NAIA) to identify if perceptions of student athletes differ. It is speculated that most NAIA institutions are more conservative in nature and located in rural regions;⁷¹ therefore, the student athlete competing at these institutions may hold different values and perceptions of others than the student athletes who attend NCAA institutions. Also, there may be BMI differences among athletes from differing levels of competition. It is speculated that most NCAA student athletes are more elite athletes and therefore may possibly have a higher BMI due to a larger lean muscle mass. Both of these variables may play a role in differing expectations regarding the appearance and dress of an AT.

Finally, a qualitative or mixed-methods study should be performed to identify student athletes' definition of competence in athletic training. These types of studies could measure the verbal or visual descriptors used by student athletes' to identify expectations and physical characteristics they attribute to an AT who is perceived as competent. The collection of this type of information may help clarify the data presented in this study and differences found in the perceived ideal BMI and appropriate dress of an AT.

CONCLUSIONS

The results of this study suggest that student athletes' perception of AT competence is influenced by appearance and dress. This research reinforces the argument that ATs should dress in business casual attire to be perceived as competent allied health care professionals. Specifically, normal and underweight ATs are perceived as more competent than the alternative. As other research of health care professionals has indicated, modeling healthy behavior is important. The foundation of healthy behaviors is education. Athletic training program faculty, preceptors, and other clinicians can assist educating athletic

training students as well as patients regarding healthy lifestyle habits and the methods of developing healthy self-concepts. Initial perceptions based on the appearance and dress of an individual may promote or prevent the formation of rapport and trust between student athletes and ATs. To avoid any barriers to building a relationship with their patients, it would benefit ATs to exhibit lifestyles that apply their health and wellness knowledge.

REFERENCES

1. NATA. Terminology. 2012; <http://www.nata.org/athletic-training/terminology>. Accessed June 28, 2012.
2. AMA. Athletic Trainer. [PDF]. 2012; <http://www.ama-assn.org/resources/doc/med-ed-products/ah03-athletic-trainer.pdf>. Accessed July 11, 2012.
3. Anderson M, Parr G, Hall S. *Foundations of Athletic Training: Prevention, Assessment, and Management*. 4 ed. Baltimore: Lippincott Williams & Wilkins; 2009.
4. Prentice WE. *Principles of Athletic Training: A Competency-Based Approach*. 14 ed. New York: McGraw Hill; 2011.
5. Henry TJ, Schneider RC, Stier Jr WF. Desirable qualities, attributes, and characteristics of successful athletic trainers -- A national study. *Sport J*. 2009;12(2):1-1.
6. Phillips-Salimi CR, Haase JE, Kooken WC. Connectedness in the context of patient-provider relationships: a concept analysis. *Journal of Advanced Nursing*. 2012;68(1):230-245 DOI: 10.1111/j.1365-2648.2011.05763.x.
7. Hall MA, Zheng B, Dugan E, et al. Measuring patients' trust in their primary care providers. *Medical Care Research and Review*. 2002;59(3):293-318 DOI: 10.1177/1077558702059003004.
8. Lovell, Parker JK, Brady A, Cotterill ST, Howatson G. Looking the part: Female sports psychologists' body mass index and dress influences athletes' perceptions of their potential effectiveness. *Sport Psychol*. 2011;25(1):82-93.
9. Lovell, Parker JK, Slater GJ. Physical characteristics of female sports dietitians influence athlete perception of effectiveness. *Int J Sport Nutr Exerc Metab*. 2012;7:7.
10. Zebrowitz LA, Collins MA. Accurate social perception at zero acquaintance: The affordances of a Gibsonian approach. *Personality and Social Psychology Review*. 1997;1(3):204-223 DOI: 10.1207/s15327957pspr0103_2.
11. Roach-Higgins ME, Eicher JB. Dress and identity. *Clothing Textiles Res J*. 1992;10(4):1-8 DOI: 10.1177/0887302x9201000401.
12. NATA. The official guide of the 2013 NATA Convention. *National Athletic Trainers' Association 64th Annual Meeting & Clinical Symposia* 2012;

- http://www.nata.org/sites/default/files/2013ConventionGuide_0.pdf. Accessed September 24, 2013, 2013.
13. *Taber's Cyclopedic Medical Dictionary*. 21 ed. Philadelphia: FA Davis Company; 2009.
 14. Kunda Z. *Social Cognition: Making Sense of People*. Cambridge, MA US: The MIT Press; 1999.
 15. Butler JC. *Physique stereotypes and prejudice: A social norm interpretation*. US, ProQuest Information & Learning; 1995.
 16. Cossrow NHF, Jeffery RW, McGuire MT. Understanding weight stigmatization: A focus group study. *J Nutr Educ*. 2001;33(4):208.
 17. Kirkpatrick SW, Sanders DM. Body image stereotypes: A developmental comparison. *Journal of Genetic Psychology*. 1978;132(1):87.
 18. Lerner RM. The development of stereotyped expectancies of body build-behavior relations. *Child Dev*. 1969;40(1):137.
 19. Ryckman RM, Robbins MA, Kaczor LM, Gold JA. Male and female raters' stereotyping of male and female physiques. *Personality and Social Psychology Bulletin*. 1989;15(2):244-251 DOI: 10.1177/0146167289152011.
 20. Ryckman, Dill DA, Dyer NL, Sanborn JW, Gold JA. Social perceptions of male and female extreme mesomorphs. *J Soc Psychol*. 1992;132(5):615-627.
 21. Brodsky CM. A study of norms for body form-behavior relationships. *Anthropol Q*. 1954;27:91-101 DOI: 10.2307/3316929.
 22. Brylinsky JA, Moore JC. The identification of body build stereotypes in young children. *J Res Pers*. 1994;28(2):170-181 DOI: 10.1006/jrpe.1994.1014.
 23. Ramsey PW, Glenn LL. Obesity and health status in rural, urban, and suburban southern women. *South Med J*. 2002;95(7):666-671.
 24. Wells WD, Siegel B. Stereotyped somatotypes. *Psychological Reports*. 1961;8:77-78.
 25. Yates J, Taylor J. Stereotypes for somatotypes: Shared beliefs about Sheldon's physiques. *Psychological Reports*. 1978;43(3, Pt 1):777-778 DOI: 10.2466/pr0.1978.43.3.777.
 26. Davis LL. Perceived somatotype, body-cathexis, and attitudes toward clothing among college females. *Perceptual and Motor Skills*. 1985;61(3, Pt 2):1199-1205 DOI: 10.2466/pms.1985.61.3f.1199.
 27. Lennon SJ. *The manner in which physical appearance cues have an impact on impression formation*. US, ProQuest Information & Learning; 1982.
 28. Lennon SJ, Miller FG. Attire, physical appearance, and first impressions: More is less. *Clothing Textiles Res J*. 1984;3(1):1-8 DOI: 10.1177/0887302x8400300101.
 29. Brambilla M, Sacchi S, Rusconi P, Cherubini P, Yzerbyt VY. You want to give a good impression? Be honest! Moral traits dominate group impression formation. *Br J Soc Psychol*. 2012;51(1):149-166 DOI: 10.1111/j.2044-8309.2010.02011.x.
 30. Fiske ST. Warmth and competence: Stereotype content issues for clinicians and researchers. *Can Psychol*. 2012;53(1):14-20 DOI: <http://dx.doi.org/10.1037/a0026054>.
 31. Chu S, Geary K. Physical stature influences character perception in women. *Personality and Individual Differences*. 2005;38:1927-1934 DOI: 10.1016/j.paid.2004.10.004.
 32. Lubker JR, Watson IJ, Visek AJ, Geer JR. Physical appearance and the perceived effectiveness of performance enhancement consultants. *Sport Psychol*. 2005;19(4):446.
 33. Lubker JR, Visek AJ, Geer JR, Watson IJ. Characteristics of an effective sport psychology consultant: Perspectives from athletes and consultants. *J Sport Behav*. 2008;31(2):147-165.
 34. Radwin LE, Cabral HJ. Trust in Nurses Scale: Construct validity and internal reliability evaluation. *Journal of Advanced Nursing*. 2010;66(3):683-689 DOI: 10.1111/j.1365-2648.2009.05168.x.
 35. NATA. Job settings. 2012; <http://www.nata.org/athletic-training/job-settings>. Accessed June 28, 2012.
 36. Unruh S. Perceptions of athletic training services by collegiate student-athletes: a measurement of athlete satisfaction. *J Athl Train*. 1998;33(4):347-350.
 37. Unruh S, Unruh N, Moorman M, Seshadri S. Collegiate student-athletes' satisfaction with athletic trainers. *J Athl Train*. 2005;40(1):52-55.
 38. Board of Certification. (2010). *The 2009 Athletic Trainer Role Delineation Stud*. Omaha, NE: Stephen B. Johnson.
 39. (CDC) CfDcaP. About BMI for adults. 2009; http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/index.html#. Accessed March 24, 2010.
 40. World Health Organization W. BMI classification. *Global Database on Body Mass Index* 2013; http://apps.who.int/bmi/index.jsp?introPage=intro_3.html. Accessed October 31, 2013.
 41. Peterson M, Orsega-Smith E, Tholstrup L. Validity of the body mass index silhouette matching test. *Am J Health Behav*. 2004;28(5):437-443.
 42. NATA-PEC. Athletic training education competencies. 5th ed. Dallas, TX: NATA; 2011.
 43. Peterson M, Ellenberg D, Crossan S. Body-image perceptions: Reliability of a BMI-based silhouette matching test. *Am J Health Behav*. 2003;27(4):355-363.
 44. Cohen J. *Statistical Power Analysis for the Behavioral Sciences*. 2nd ed. Hillsdale, NJ: Lawrence Erlbaum Associates; 1988.
 45. Hoaglin D, Iglewicz B. Fine tuning some resistant rules for outlier labeling. *J Am Stat Assoc*. 1987(82):1147-1149.
 46. Oberg EB, Frank E. Physicians' health practices strongly influence patient health practices. *J R Coll Physicians Edinb*. 2009;39(4):290-291.
 47. Borchardt GL. Role models for health promotion: The challenge for nurses. *Nurs Forum*. 2000;35(3):29.
 48. Banerjee A, Sanyal D. Dynamics of doctor--patient relationship: A cross-sectional study on concordance, trust, and patient enablement. *Journal of Family &*

- Community Medicine*. 2012;19(1):12-19 DOI: 10.4103/2230-8229.94006.
49. Johnson KKP, Schofield NA, Yurchisin J. Appearance and dress as a source of information: A qualitative approach to data collection. *Clothing Textiles Res J*. 2002;20(3):125-137 DOI: 10.1177/0887302x0202000301.
50. Sikorski C, Riedel C, Luppia M, et al. Perception of overweight and obesity from different angles: A qualitative study. *Scand J Public Health*. 2012;40(3):271-277 DOI: 10.1177/1403494812443604.
51. CDC. Vital signs: State-specific obesity prevalence among adults - United States, 2009. *Morbidity and Mortality Weekly Report*. 2010;59.
52. Groth JJ, Ayers SF, Miller MG, Arbogast WD. Self-Reported Health and Fitness Habits of Certified Athletic Trainers. *Journal of Athletic Training*. 2008;43(6):617-623.
53. NATA. Code of Ethics. *National Athletic Trainers' Association: Key Documents* 2010; <http://www.nata.org/volunteer-resource-center/key-documents>. Accessed January 2, 2011.
54. Adult Participation in Recommended Levels of Physical Activity - United States, 2001 and 2003. *JAMA: Journal of the American Medical Association*. 2006;295(1):27-29.
55. Haskell WL, Lee IM, Pate RR, et al. *Physical activity and public health: updated recommendation for adults from the American College of Sports Medicine and the American Heart Association*. Circulation. 2007 Aug 28;116(9):1081-93. Epub 2007 Aug 1.
56. liveWELL. 2019; <https://hr.uiowa.edu/well-being/livewell>. Accessed November 13, 2019.
57. Live Healthy Iowa. 2019; <https://www.livehealthyiowa.org/home>. Accessed November 13, 2019.
58. Barss P, Grivna M, Al-Maskari F, Kershaw G. Strengthening public health medicine training for medical students: Development and evaluation of a lifestyle curriculum. *Medical Teacher*. 2008;30(9/10):e196-e218 DOI: 10.1080/01421590802334267.
59. Horneffer KJ. Students' self-concepts: implications for promoting self-care within the nursing curriculum. *Journal of Nursing Education*. 2006;45(8):311-316.
60. Horneffer-Ginter K. Stages of Change and Possible Selves: 2 Tools for Promoting College Health. *Journal of American College Health*. 2008;56(4):351-358.
61. Sreeramareddy CT, Suri S, Menezes RG, et al. Self-reported tobacco smoking practices among medical students and their perceptions towards training about tobacco smoking in medical curricula: A cross-sectional, questionnaire survey in Malaysia, India, Pakistan, Nepal, and Bangladesh. *Subst Abuse Treat Prev Policy*. 2010;5:29 DOI: 1747-597X-5-29 [pii]10.1186/1747-597X-5-29.
62. Perrin DH. Athletic Training: From Physical Education to Allied Health. *New Quest*. 2007;59(1):111-123.
63. Lisher SM. *A Descriptive History of the Discipline of Athletic Training Education* 2002.
64. Fincher DL. Personal Perspective on History of Athletic Training. In: Rogers J, ed. Orange City 2011:1.
65. Foster DD. Personal Perspective on History of Athletic Training. In: Rogers J, ed. Orange City 2011:1.
66. Delforge GD, Behnke RS. The history and evolution of athletic training education in the United States. *Journal of Athletic Training*. 1999;34(1):53-61.
67. Breitbach AP, Brown SD. The Institutional and Professional Benefits of Housing Athletic Training Education Programs in Schools of Health Professions. *Journal of Allied Health*. 2011;40(1):39-42.
68. Eaves T. Where should athletic training programs be housed? *Athletic Training Education Journal*. 2010;5(4):176-178.
69. Portney LG, Watkins MP. *Foundations of Clinical Research: Applications to Practice*. 3rd ed. Upper Saddle River, NJ: Pearson: Prentice Hall; 2009.
70. Ackland TR, Lohman TG, Sundgot-Borgen J, et al. Current status of body composition assessment in sport: Review and position statement on behalf of the ad hoc research working group on body composition health and performance, under the auspices of the I.O.C. medical commission. *Sports Med*. 2012;42(3):227-249 DOI: 10.2165/11597140-000000000-00000.
71. NAIA. NAIA Member Schools. 2016; http://www.naia.org/ViewArticle.dbml?DB_OEM_ID=27900&ATCLID=205322922. Accessed November 7, 2016, 2016.