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The Role of Appearance in Perceptions of Personal Trainers

by

Patrick R. Boerner

Submitted in Partial Fulfillment of

The Requirements of the Masters of Science in Exercise Science Degree

Kinesiology Department

STATE UNIVERSITY OF NEW YORK COLLEGE AT CORTLAND

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## ABSTRACT

The purpose of this study was to investigate how personal trainer physique can influence perceptions of his/her: (a) competence as a trainer, (b) level of personal training knowledge, (c) behavioral attributions, and (d) sexual orientation. Participants were 191 undergraduate students within the professional studies school at a northeast public university. Participants were presented with pictures of male and female volunteers labeled as personal trainers. The pictures emphasized physique and consisted of varying body types (ectomorph, mesomorph, and endomorph) and muscularity (muscular versus non-muscular). Participants used the pictures presented them to answer surveys designed to collect their ratings of the trainers' competence, knowledge, behavioral attributes, and sexual orientation. Muscular male and female personal trainers across all body types were often perceived to be significantly more knowledgeable and competent than their non-muscular peers. Additionally, positive behavioral attributions (i.e., hardworking, happy) were often associated with the muscular male and female personal trainers. As a whole, muscular and non-muscular males were often rated more positively on competence, knowledge and behavioral measures than their female counterparts. Sexual orientation was a difficult construct to measure with the use of static pictures and the results should be taken with caution. Personal trainers, new graduates, and others who work in a field where their bodies are highly visible can use these findings to improve their business—either by niche marketing or simply being aware of the stereotypes they may encounter.

## ACKNOWLEDGEMENTS

I would like to take the time to thank everyone who helped me with this research project. It goes without mention that I would not have been able to complete this endeavor without the help of my thesis advisor, Dr. Katherine Polasek, and my committee members Dr. Joy Hendrick and Dr. Erik Lind. With your help I was able to pursue this challenging task with confidence knowing I had the support of practiced professionals. I truly appreciate all of the input and support you gave me as professors and academic friends. While not on my committee, Dr. James Hokanson also provided valuable insight concerning the nature of my study. I would also like to thank Dr. Peter McGinnis—I truly appreciate your positive attitude and support for us graduate students while we pursued our theses.

I would like to thank the volunteers who allowed me to take their pictures for use in my study. I know not everyone is comfortable wearing physique accentuating clothing and having their image shown to others. I appreciate your candidness and willingness to help me complete my thesis—without you this would not have been possible.

Lastly, I would like to thank my father, Steven Boerner, and my life partner, Benjamin DeJonge. With their help I was able to adjust and modify the pictures I took and place them online in a professional manner. Their contribution to my thesis endeavor was monumental. Thank you both.

The experience of pursuing my masters degree here at Cortland has been something that I will always remember. Many have not only helped me complete this research project, but have also made these two years an experience I will not forget. Once again, thank you to everyone who has helped me along the way—professors, colleagues, and students alike. While this

manuscript embodies what I have learned up to this point academically, it also represents the invaluable friendships and connections I have made throughout this journey. Thank you.

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## CHAPTER 1

### **Introduction**

The field of personal training in the United States is believed to have begun in the late 1970's and the early 1980's (Brooks, 2004). Today, personal training is a healthy profession that, according to the United States Department of Labor and the Bureau of Labor Statistics (2012), is expected to grow 24% (60,400 jobs) between 2010 and 2020. In comparison, the Bureau of Labor Statistics (2012) predicts the average growth rate for all occupations within the U.S. to be only 14% during the same ten-year span.

Rapid growth within the field of personal training has brought an increased scrutiny on the qualifications of trainers working in the industry. Currently, there is no official unifying licensing body for personal trainers (Melton, Katula, & Mustian, 2008). Melton et al. (2008) highlighted a total of 19 different personal trainer certifications of varying quality offered by several organizations. The lack of a universal licensing body creates tension in the field; Melton et al. notes that in order to become a certified personal trainer, an individual simply has to pay a fee, complete an exam, and apply to a fitness facility.

Due to this perceived and actual lack of unifying licensure within the personal training field, there has been a drive to discern what characteristics successful personal trainers possess (Madeson, Hultquist, Church, & Fisher, 2010; Melton, Dail, & Katula, 2011; Melton, Dail, Katula, & Mustian, 2010; Melton et al., 2008). Characteristics that have been found to greatly influence a client's decision to hire a personal trainer include personal trainer competence within the field (Madeson et al., 2010), physique, social skills, and credentials/education (Melton et al., 2011; Melton et al., 2010; Melton et al., 2008). Additionally, the American College of Sports Medicine (ACSM) has created a master list of knowledge, skills, and abilities (KSA's) that their Certified Health Fitness Specialists should be familiar with (Central Connecticut State University, 2013). These KSA's provide an in-

depth and broad knowledge checklist that includes factors such as: proper program supervision, awareness of client medications, and basic human behavior (CCSU, 2013).

Of the characteristics mentioned above, personal trainer physique is the only characteristic that is directly observable. Individuals meeting a personal trainer for the first time may use the observed physique as a heuristic to pass judgment on the trainer's personal traits and behaviors (Freeman, 1988). Existing research highlights how students within the field of exercise science (Chambliss, Finley, & Blair, 2004) and health professionals specializing in obesity (Schwartz, Chambliss, Brownell, Blair, & Billington, 2003) possess implicit negative biases towards obese individuals. Furthermore, Johnson, Gill, Reichman, and Tassinary (2007) suggested that morphology and body motion can lead an onlooker to make perceptions of the observed individual's sexual orientation.

Clients inherently view physique as an important characteristic of personal trainers (Melton et al., 2011; Melton et al., 2010; Melton et al., 2008). Freeman (1988) also demonstrated that observed physique can be used to pass judgment of others ability. Several studies have also examined the role personal trainer knowledge plays in clients' evaluations of personal trainers (Melton et al., 2010; Melton et al., 2008; Rotwein, 2003). The research has examined how credentials and/or certain behavioral attributions of trainers can shift the focus away from external qualities (e.g., physique) towards internal characteristics (e.g., competence, knowledge, and behavioral tendencies).

Currently, there is limited research available that examines clients' perceptions of personal trainers with regards to the trainer's physique (Mears, 2007; DeMaria & Greenleaf, 2009).

## **Statement of the Problem**

The purpose of this study was to investigate how personal trainer physique influenced an individual's perception of his/her: (a) competence as a trainer, (b) level of personal training knowledge, (c) behavioral attributions, and (d) sexual orientation.

## **Research Questions**

The research questions were as follows:

1. How does the physique of a personal trainer, as viewed in color picture format on a computer screen, influence the perceptions of individuals (and therefore potential clients)?
  - a. How does the physique of a personal trainer influence other's perceptions of his/her competence as a personal trainer?
  - b. How does the physique of a personal trainer influence other's perceptions of his/her level of personal training knowledge?
  - c. How does the physique of a personal trainer influence other's perceptions of his/her behavioral attributions?
  - d. How does the physique of a personal trainer influence other's perceptions of his/her sexual orientation?

## **Significance**

To date, the research that focuses primarily on personal trainer physique and client perceptions has been limited to unpublished theses and poster presentations (Mears, 2007; DeMaria & Greenleaf, 2009). However, much peer reviewed research is available that highlights the key aspects of perceived competence (Lubker, Watson, Visek, & Geer, 2005), knowledge (Ritts, Patterson, & Tubbs, 1992), and behavioral attributions (Gacsaly & Borges, 1979) based upon physique. However, research concerning perceived sexual orientation (Johnson et al., 2007) based on observed physique is less substantial.

Determining how and why the key factors of perceived competence, level of personal training knowledge, behavioral attributions, and sexual orientation are viewed by individuals will be beneficial in many ways. It may help improve client-trainer matching, allow for personal trainers and new graduates to better market themselves, and highlight the prominence that physique perceptions play within the fitness industry.

### **Limitations**

Limitations for this study were as follows:

1. It was impossible to ensure the honesty of all the participants in their answers.
2. Researcher bias can never be completely eliminated.
3. Pictures of personal trainers (viewed on a computer screen) are not directly comparable to direct observations.
4. The range of pictured physiques presented to participants may not have been extreme enough to elicit significant differences within all measures.
5. The participants may not have accurately represented the clientèle of personal trainers.
6. A majority of the sample came from an athletic population.

## **Delimitations**

Delimitations for this study were as follows:

1. Participants were comprised of undergraduate students from a public university.
2. Participants were recruited via campus wide email, flyers, class announcements, and word of mouth.
3. Perceptions were based on viewing different pictures of personal trainers, modified to represent different body types and levels of muscularity.
4. Each participant answered the same questions and viewed the same pictures.
5. The primary investigator proctored data collection sessions with participants.

## **Assumptions**

Assumptions for this study were as follows:

1. Participants answered all questionnaires and free response questions honestly.
2. The pictures of personal trainers selected for their physiques were effective in eliciting perceived competence, level of personal training knowledge, behavioral attributions, and sexual orientation from the participants.
3. The data collected from the student sample for this study was applicable and compatible with the personal training profession.

## **Definition of Terms**

Attributions: “Judgments about the causes of outcomes” (American Psychological Association, 2012).

Competence: Proficiency in designing workouts, instructing clients on exercise and nutrition, and addressing the “wants and needs” of their (the personal trainer’s) client base (Madeson et al., 2010).

Ectomorphy: An individual whose body has a “...relative predominance of linearity and fragility” (Sheldon, Stevens, & Tucker, 1940, p. 5). “... ”



Endomorphy: An individual whose body has a "...relative predominance of soft roundness throughout the various regions of the body" (Sheldon et al., 1940, p. 5).

Knowledge: "Credentials" which include a college education and/or proper personal trainer certification (Melton et al., 2008).

Mesomorphy: An individual whose body has a "...relative predominance of muscle, bone, and connective tissue" (Sheldon et al., 1940, p. 5).

Personality: "The unique psychological qualities of an individual that influence a variety of characteristic behavior patterns (both overt and covert) across different situations and over time, (APA, 2012).

Sexual Orientation: "The directionality of one's sexual interests—towards members of the same gender, the other gender, or both genders" (Rathus, Nevid, & Fichner-Rathus, 2000, p. 645).

Social Skill: "...the ability to interact effectively with a diverse population of clients" (Melton et al., 2010, p. 3175).

## CHAPTER 2

### **Review of Literature**

The purpose of this study was to investigate how potential clients' perceptions of a personal trainer's physique impact the client-trainer relationship and the ramifications these perceptions may cause within the fitness industry. The study investigated how personal trainer physique can impact clients' perceptions of personal trainers': (a) competence as a personal trainer, (b) level of personal training knowledge, (c) behavioral attributions, and (d) sexual orientation.

This literature review will address the following topics: (a) History of Personal Training, (b) Lack of Certification Consensus, (c) Characteristics of Successful Personal Trainers, and (d) Physique Based Perceptions and Assumptions of Personal Trainers.

#### **History of Personal Training**

The field of personal training gained its contemporary characteristics during the late 1970's and early 1980's and beginning in the major east (New York City) and west (Los Angeles) populace centers of the United States, the personal training field expanded fervently (Brooks, 2004). According to Brooks (2004), "Zealous enthusiasts flocked to this get-fit frenzy at all costs ... and they trusted personal trainers and group fitness instructors alike who looked the part but may not have had the necessary qualifications ..." (p. 5). During the 1990's, the fervor surrounding the field tapered and clients became more discriminating in their choice of personal trainers and the qualifications they possessed (Brooks, 2004).

Today, personal training remains a successful and growing field. According to the United States Department of Labor and the Bureau of Labor Statistics (2012) the number of fitness trainers and instructors (i.e., personal trainers) was 251,400 during 2010 and the estimated growth rate for the field is expected to be 24% (approximately 60,400 jobs) between 2010 and 2020. The US Bureau of Labor Statistics (2012) defines fitness trainers as

leaders that motivate individuals and/or groups in cardiovascular, strength training, and stretching exercises. Compared to the average growth rate of 14% for all occupations, fitness training possesses close to double the rate of job growth (US Bureau of Labor Statistics, 2012).

### **Lack of Certification Consensus**

According to a literature review conducted by Melton et al. (2008), there were at least 19 different personal trainer certifications available during 2000 (Idea Personal Trainer, 2000). In their review the researchers discussed how the certifications available to the populace ranged in the quality of training provided—often times being directly correlated to the cost of the program itself (Melton et al., 2008). Melton et al. identified the American College of Sports Medicine (ACSM) Health Fitness Instructor certification as being rigorous in content (scientific, practical, and courses requiring prerequisites). The American College of Sports Medicine (ACSM) provides standards that other personal training organizations use to instruct and certify their applicants (ACSM, 2013). Contrary to the stringent nature of the ACSM, Melton et al. identified that some programs have the individual simply pay a fee and take an exam to become a certified personal trainer.

### **Characteristics of Successful Personal Trainers**

With a lack of unified licensure within the fitness industry, particularly for personal trainers, there has been a concerted effort to identify characteristics and qualities that make personal trainers and their clients successful (Madeson et al., 2010; Melton et al., 2011; Melton et al., 2010; Melton et al., 2008). Within the literature, personal trainer characteristics that influence an individual's decision to hire a personal trainer are identified as personal trainer competence (Madeson et al., 2010), physique, social skills, and credentials/education (Melton et al., 2011; Melton et al., 2010; Melton et al., 2008).

Through the use of qualitative analysis and interviews of clients, Madeson et al. (2010) defined the construct of personal trainer competence as including: proficiency in designing workouts, instructing clients on exercise and nutrition, and addressing the “wants and needs” of their client base. Similar competencies are highlighted within the research of Melton et al. (2008). Personal training organizations offering certifications agree that knowledge of what constitutes a healthy lifestyle and the ability to elicit health behavior modification from clients are also important competencies for personal trainers (Melton et al., 2008). Additionally, competence in nutritional advice, exercise design, programming, and management (all while taking external factors such as chronic diseases clients may have into account) is another important skill highlighted by certifying agencies (Melton et al., 2008).

The ACSM employs the use of its Knowledge, Skills, and Abilities (KSA) paradigm to ensure that their licensed health professionals are well experienced in all the competencies previously described (CCSU, 2013). At its core, KSA’s are a master list of competencies (i.e., knowledge of exercise physiology, health appraisal, human behavior, etc.) that all fitness professionals certified by the ACSM should know in depth (CCSU, 2013). Many other certifying agencies for personal trainers incorporate many, if not all, of the KSA concepts outlined by the ACSM (2013).

Melton et al. (2008) identified personal training knowledge as an important aspect of a successful personal trainer via their construct of “Credentials” which includes college education and/or proper certification. Melton et al. used focus groups composed of personal trainers to illustrate consensus in the belief that a college education with a science focus is needed to obtain the necessary knowledge to be a successful personal trainer. They also found that the personal trainers within the focus groups were dissatisfied with the current state of personal trainer certification. Participants agreed that there was a need for a comprehensive form of licensure (similar to nursing or dieticians), due to the patchwork of

certifications available that do not adequately prepare personal trainers for all the aspects of the field (Melton et al., 2008).

Similar to potential clients, potential managers of personal trainers look for individuals who possess the required skills to be successful. When 11 managers of personal trainers were asked, via a focus group, what qualities they looked for when hiring personal trainers, six answered personality (i.e., behavioral traits impacting social skills) and five answered credentials (Melton et al., 2010). According to Melton et al. (2008) “Social skills are the ability to effectively interact and communicate with a diverse clientele. Such interaction may be a result of personality traits such as extroversion, being friendly, and outgoing; a ‘people person’” (p. 886). Melton et al. (2011) also describes social skills as encompassing interpersonal skills. Furthermore, Melton et al. (2011) asserted that “Effective interpersonal skills (e.g., charisma, sincerity) can lead to deeper, satisfying relationships (e.g., friendship) in one-on-one training” (p. 8).

Melton et al. (2011) identified physique appearance as one quality of successful trainers. Their participants described how a good physique was necessary in order for them to have confidence that the trainer “knew their stuff” (p. 7). That is, the trainer “...must be motivated to be healthy, so they must possess the skill to motivate others” (Melton, 2011, p. 7). Similarly, Sartore and Cunningham (2007) noted that in spite of individuals’ qualifications, body weight influenced perceived person-job fit and recommendations for pursuing fitness industry jobs. Conversely, Melton (2011) recorded that many participants recognized that physical appearance was not sufficient alone to predict trainers’ level of knowledge within the personal training field.

## **Physique Based Perceptions and Assumptions of Personal Trainers**

One of the physical qualities that people notice when meeting a new individual is their basic body type. As Freeman (1988) states:

...physical appearance is an obvious characteristic upon which to base human judgment, investigators concerned with social perception have studied the ways in which knowledge of a person's outward appearance, particularly concerning physical attractiveness, influence judgment of that person's personal traits and characteristic ways of behaving. (p. 281)

In a study by Gacsaly and Borges (1979), researchers investigated perceived traits for tall and short endomorphs, mesomorphs, and ectomorphs. Endomorphs, both tall and short, were significantly rated by participants to "be the worst athlete" when compared to tall and short mesomorphs and ectomorphs. Similarly, research by Butler, Ryckman, Thornton, and Bouchard (1993) also demonstrated that mesomorphs were perceived more positively than endomorphs and ectomorphs on favorable attributes such as bravery, sensitivity, and extraversion.

Personal trainers within the fitness industry are not immune to this social judgment. Research by Melton, Dail, and Katula (2011) highlighted how clients who observed personal trainers with "good physiques" perceived them to possess the skills necessary to motivate others effectively. Similarly, Melton et al. (2008) also found that personal trainers believe physique plays a critical role in how clients perceive them. A self-described large, fit, and muscled personal trainer noted how many potential clients were intimidated by his physique (Melton et al., 2008).

To further illustrate how predominant physique-based assumptions are, research has shown that Performance Enhancement Consultants (PECs) and physicians are impacted as well (Lubker et al., 2005; Hash, Munna, Vogel, & Bason, 2003). According to Lubker et al. (2005), lean build PECs were indicated by participants to be selected for services more so than large build PECs, regardless of whether they were dressed academically or athletically.

Additionally, Hash et al. (2003) discovered that patients of obese physicians had less confidence in the health advice given to them than did patients who received health advice from non-obese physicians.

Biases towards certain physiques are not limited to clients, athletes, or patients of health/fitness professionals. It was documented by Schwartz et al. (2003) that health professionals (e.g., physicians, researchers, and dietitians) who worked with obese patients and/or conducted obesity research had significant implicit and explicit anti-fat biases. These results were discovered using an explicit bias scale and a form of the Implicit Association Test (IAT) that measured participants' implicit ratings of thin and obese individuals (Schwartz et al., 2003). Similarly, Chambliss et al. (2004) found that students majoring within the field of exercise science also possessed implicit biases towards obese individuals. With the use of the IAT, they found that students not only implicitly perceived being obese as "bad," but also associated obesity with laziness.

One area in need of further examination involves how the physique of a personal trainer elicits perceptions of their sexual orientation. Johnson et al. (2007) investigated how one's morphology and body motion can influence perceived sexual orientation. More specifically, they noted that gender-typical arrangements of body shape and motion, such as a "...tubular body moving with shoulder swagger..." (male) and an "...hourglass body moving with hip sway..." (female) were identified by participants as heterosexual (p. 321). Furthermore, they suggested that gender-atypical arrangements of body shape and motion were identified as being homosexual. This finding applied to both animated forms and actual human forms as well.

Freeman (1988) analyzed perceived gender role behaviors of both male and female bodybuilders/non-bodybuilders. In the study, participants were asked to rate the degree to which they believed a described individual (male or female, bodybuilder or non-bodybuilder)

was heterosexual or homosexual. Two significant interactions were discovered. The data revealed that females who were described as being a bodybuilder were more likely to be perceived as homosexual than non-bodybuilding females and bodybuilding men. Conversely, it was also noted that males who were described as participating in bodybuilding were viewed as less likely of being homosexual. Furthermore, males, to a higher degree than females, perceived those who engaged in bodybuilding as less likely of being homosexual. Freeman succinctly summarized, “It is apparent that information that is inconsistent with gender leads to an increase in estimated probability of homosexuality, and information that is consistent leads to a decrease” (pp. 286-287).

### **Summary and Rationale**

There is a limited amount of research dedicated to solely examining the role of personal trainer physique and subsequent client perceptions (Mears, 2007; DeMaria & Greenleaf, 2009). However, there is prolific research investigating perceptions based upon body-type. For example, there is literature highlighting how performance enhancement consultants and their physiques influence athletes’ decisions to request services (i.e., belief in competence/service delivery) and their perception of sport knowledge of a certain PEC (Lubker et al., 2005). There is also research investigating the impact of body-type and perceived personality traits (Butler et al., 1993; Gacsaly & Borges, 1979). Johnson et al. (2007) studied how body-type and body motion influenced perceived sexual orientation of an individual.

With the multitude of literature available focusing on body-type and various competence, knowledge, behavioral, and sexual orientation perceptions, the following study utilized the information available to construct an investigation focusing on personal trainers. More specifically, the following study incorporated similar methods and questions from



applicable physique perception research while shifting the focus solely on personal trainers and the perceptions their physiques elicit from others.

Researching how and why individuals perceive personal trainer competence, level of personal training knowledge, behavioral attributes, and sexual orientation from a trainer's physique may allow personal trainers and new graduates within the fitness industry to be better matched with clients. Additionally, the proposed research may allow for personal trainers to utilize their physique to better market themselves in a positive light (Rotwein, 2003). Melton et al. (2008) described this behavior as personal trainers catering to a niche market of clients (i.e., bodybuilders or stay at home moms). Lastly, the proposed study will highlight the prominence that physique perceptions play within the fitness industry.

## CHAPTER 3

### **Methodology**

The purpose of this study was to investigate how personal trainer physique influences the perceptions formed by clients of the personal trainer. Specifically, the investigation examined how personal trainer physique influences client perceptions of his/her: (a) competence as a trainer, (b) level of personal training knowledge, (c) behavioral attributions, and (d) sexual orientation.

The following chapter will include information pertaining to: (a) Research Design, (b) Participants, (c) Procedures, (d) Instruments, (e) Materials, and (f) Data Analysis.

#### **Research Design**

For the purpose of this study, a parallel mixed-methods approach was used. Thomas, Nelson, and Silverman (2011) describe this method as “A study in which the quantitative and qualitative components occur at the same time or independently” (p. 372). A valuable asset of conducting a mixed-methods investigation versus solely a quantitative or qualitative research design is that a much broader and richer explanation of the research questions can be attained (Thomas et al., 2011). For the current study, the quantitative component was a series of measures that the participants completed after viewing photos depicting individuals (labeled as personal trainers) of varying physique. Qualitatively, the participants provided written responses to open-ended questions asking why they answered the quantitative measures in the way they did.

#### **Participants**

Participants for the study were 191 undergraduate student volunteers attending a midsize, northeastern public college. One hundred and eight participants identified as Juniors, 50 as Sophomores, and 33 as Seniors. Students within the Kinesiology, Psychology, and Performing Arts departments were solicited for their participation. Seventy two

participants identified as Exercise Science Majors, 70 Physical Education, 26 Fitness Development, 9 Athletic Training, 4 Kinesiology, 2 Sport Studies, 2 Coaching, 2 Community Health, 2 Biology, 1 Psychology, and 1 Biomedical Engineering.

The sample was 59.7% male with 164 self-reported to be White/Caucasian, 13 Hispanic, 8 Black/African American, 3 Other, and 2 Asian/Pacific Islander. One participant did not disclose their race/ethnicity. The average age was 20.92 years ( $SD = 2.58$ ). The youngest was 19 and the oldest was 44 years of age. Average height was 1.76 meters ( $SD = .30$ ). Average weight was 74.75 kilograms ( $SD = 14.78$ ). Concerning sexual orientation, 186 identified as straight, 2 identified as Lesbian, 2 identified as a bisexual woman, and 1 identified as a bisexual man.

Since the nature of this study focused on perceptions of personal trainers, demographic data was also collected concerning personal training. Eight of the participants identified themselves as certified personal trainers. Two identified as a National Strength and Conditioning Association-Certified Strength and Conditioning Specialist (NSCA, 2013), four identified as Aerobics and Fitness Association of America (AFAA, 2013) certified, one identified as an American Muscle and Fitness Personal Trainer (AMFPT, n.d.), and one claimed to have a Bigger, Faster, Stronger (BFS, 2010) certification.

### **Instrumentation**

The instruments used for data collection included pictures of volunteers labeled as personal trainers as well as quantitative and qualitative questionnaires that were presented via web based platforms.

#### **Personal trainer pictures.** (see Appendix A)

Four models wearing similar identifiable personal training attire (i.e., a black tank top, black compression shorts, and black ankle socks) had their pictures taken with a Casio EX-F1 Digital Camera (Casio Computer CO., LTD, 2013). There were two female

volunteers. One was highly muscular and of mesomorphic body type. The other female volunteer possessed a non-muscular mesomorphic physique. The pictures were taken from an anterior, sagittal, and posterior viewpoint against a light beige wall with the models in the anatomical position. The same protocol was followed for the two male models (one muscular mesomorph and one non-muscular mesomorph).

All volunteers were Caucasian. All jewelry and piercings were removed for the photos. If a volunteer had tattoos or non-black clothing, the markings were removed and the colors were changed to black when the pictures were digitally modified.

The three mesomorphic planar pictures of each participant were then modified using Adobe Photoshop (Adobe Systems Incorporated, 2013). The pictures were digitally modified to create ectomorphic and endomorphic physiques similar to the body type categories set forth by Sheldon et al. (1940). With the process completed there were twelve unique pictures (thirty six total pictures with distinct planar views included). The twelve unique pictures included six female pictures. These included a muscular endomorph, mesomorph, and ectomorph. The final three female pictures were composed of a non-muscular endomorph, mesomorph, and ectomorph. At the completion of the digital modification there were six similar pictures for the male volunteers as well.

For consistency, the final digitally modified pictures had their heads cropped off to prevent facial features confounding the results. The rationale to use two male and two female volunteers each possessing either a muscular or non-muscular mesomorphic physique was due to the difficulty in digitally enhancing the models to appear more muscular while also maintaining realism and convincingness. To mitigate this confound, models were selected that possessed similar morphological characteristics via the discretion of the primary researcher.

**Dropbox.**

The file sharing website Dropbox (Houston & Ferdowsi, 2013) was utilized to organize and present the pictures viewed by the participants during the survey. In order to counterbalance the presentation of the pictures, maintain realism, and control for testing fatigue, participants were presented four out of the twelve sets (set meaning the three planar pictures taken of one model) of pictures. Twelve conditions were created. “A”, “B”, and “C” were used to designate whether the participants viewed four ectomorph (A), mesomorph (B), or endomorph (C) pictures. 1, 2, 3, and 4 delineated in what order the pictures were presented. Conditions were coded as A1, A2, A3, A4, B1, B2, B3, B4, C1, C2, C3, and C4. For example, condition A2 consisted of all ectomorphic pictures in the order of muscular female, muscular male, non-muscular female, and non-muscular male.

Yellow slips of paper were used to randomly assign participants to each condition. Each individual slip of paper was labeled with one of the twelve conditions (i.e., A2) and the appropriate address of the website that the participant could type into a web browser to view the conditional pictures.

**SelectSurvey.NET.**

SelectSurvey.NET (atomic DESIGN, LLC, 2010) was used to create and administer the survey used in this study. In the following order, the survey consisted of an informed consent (see Appendix J), condition input screen, Demographic Questionnaire (see Appendix B), Perceived Personal Trainer Competence Questionnaire, Perceived Personal Trainer Knowledge Questionnaire, Perceived Personal Trainer Behavioral Attributions Questionnaire, Perceived Personal Trainer Sexual Orientation Questionnaire (see Appendices C through F) and a Free-Response Questionnaire (see Appendix G). The Perceived Personal Trainer Competence Questionnaire, Perceived Personal Trainer Knowledge Questionnaire, Perceived Personal Trainer Behavioral Attributions Questionnaire, and the Perceived

Personal Trainer Sexual Orientation Questionnaire were repeated four times to correspond with the appropriate pictures presented to the participants via the Dropbox (Houston & Ferdowski, 2013) website.

Each condition contained four different sets of personal trainer pictures. While the body-type remained the same for all the pictures presented to the participants, each condition always consisted of the muscular male, muscular female, non-muscular male, and non-muscular female.

**Demographic questionnaire.** (Appendix B)

The demographic questionnaire consisted of five main sections designed to gather demographic data. The sections included demographics (i.e., age, height, weight), education (i.e., year in college), personal training (i.e., does the participant have a personal trainer currently?), collegiate sports (i.e., does the participant participate in National Collegiate Athletic Association sanctioned sports?), and recreational activity (i.e., how often does the individual engage in leisure-time physical activity?). The questionnaire also asked for personal trainer certifications held, the length of time an individual has been certified (Conroy, 2011) and the preference for male or female exercise leaders (Mears, 2007).

**Perceived personal trainer competence questionnaire.** (Appendix C)

Using qualitative data from Melton et al. (2011) that listed clients' responses to what skills they believed competent personal trainers possessed (i.e., motivation to be healthy and ability to motivate others to be healthy) and personal trainer competencies listed by both the National Council on Strength and Fitness (2012) and the National Strength and Conditioning Association (2013), a questionnaire was developed to assess perceived trainer competence. Questions on the instrument are Likert-type and range from 1 (not at all) to 6 (extremely). An example being: "The personal trainer in the picture has the ability to develop effective and safe exercise programs for their clients."

**Perceived personal trainer knowledge questionnaire.** (Appendix D)

Using research presented by Melton et al. (2008), core knowledge content areas were synthesized into a questionnaire to assess personal trainer knowledge. Questions on the questionnaire are Likert-type and range from 1 (not at all) to 6 (extremely). Additionally, questions were added to evaluate perceived education level and management knowledge. This was done because Melton et al. (2008) recorded one personal trainer participant who stated, “I think in the degree field, we missed it. We have all this background on anatomy and physiology, but we didn’t have anything on basic gym management” (p. 886). An example of a question from the instrument states: “The personal trainer in the picture is knowledgeable about exercise programming and management.”

**Perceived personal trainer behavioral attributions questionnaire.** (Appendix E)

Butler et al. (1993) developed a list of key personality traits and behavior attributions to rate somatotype sketches that were accompanied by short descriptions of physique structure (i.e., predominance of fat or muscle). This was done through a free-response format where participants in a previous study were asked to view and describe their personality perceptions of the same sketches (Butler et al., 1993). For the purpose of this investigation, ten items from Butler et al.’s (1993) study have been included in a questionnaire that participants used to rate the personality of the four pictured personal trainers.

Examples of personality traits and attributions from the scale are bipolar ratings of “lazy-hardworking” and “introverted-extroverted.” Participants were asked to rate each bipolar trait on a Likert-type scale of 1 to 7 (the same scale used by Butler et al., 1993) with each extreme end of the scale corresponding to particular trait. For instance, a participant’s rating of 1 for the “lazy-hardworking” trait would mean they perceived the pictured personal trainer to be lazy. However, if they rate the picture a 7 that would mean they perceived the

personal trainer to be hard working. A rating of 4 would correspond to a participant's perception that the pictured personal trainer possesses equal amounts of the bipolar trait.

**Perceived personal trainer sexual orientation questionnaire.** (Appendix F)

Included in this investigation is a modified version of the Kinsey Scale (Kinsey Institute, 2012) to assess participants' perceptions of the pictured personal trainers' sexual orientation. According to the Kinsey Institute (2012), the Kinsey Scale was created by Kinsey, Pomeroy, and Martin in 1948. The purpose for developing the scale was to provide a measure that accounted for the fluid and non-dichotomous nature of sexual orientation (Kinsey Institute, 2012). The scale was originally designed to be used by an individual to assess their own sexual orientation (Kinsey Institute, 2012). For the purpose of this study it has been altered to allow participants to use it as a basis for recording their perceptions of personal trainer physiques. The scale itself is Likert based and ranges from 0 "Exclusively heterosexual with no homosexual" to 6 "Exclusively homosexual" (The Kinsey Institute, 2012).

**Free-response questionnaire.** (Appendix G)

Participants answered a self-developed free-response questionnaire in order to qualitatively understand why they rated the pictures in the manner in which was done. Using the previously explained instruments as a guide, the goal of this questionnaire was to add context to the quantitative data. Thomas et al. (2011) supports the addition of qualitative research by stating that "...qualitative research usually builds hypotheses and theories in an inductive manner, that is, as a result of the observations" (p. 354). An example item from the survey asks: "How influential was the physique of the personal trainers pictured in impacting your ratings of their competence as a personal trainer?"



## Procedures

Participants were recruited by email, flyers, class announcements, and word of mouth. Interested volunteers were asked to sign up for a time slot (via email, phone, or in person). In the process of announcing the study and signing up, participants underwent a briefing protocol so that they understood what would occur and what to expect during the data collection. Once the participants arrived for the scheduled appointment they were met by the researcher and led into a computer lab that could seat 20 people. Prior to the participants entering the computer lab, the yellow slips of paper with the Dropbox (Houston & Ferdowsi, 2013) website address were randomly placed at each computer. Once seated, the participants were given directions on how to access the online survey hosted by Select.Survey.NET (atomic DESIGN, LLC, 2010) and accompanying personal trainer pictures.

Participants were instructed to type in the web address for the online survey into their computer's online search engine. This enabled them to access the Select.Survey.NET servers (atomic DESIGN, LLC, 2010). Once participants were at the survey login screen, they were given the identification number to access the survey created for the study. Once the survey web address and identification number was entered, the participants were instructed to open another new browser window and enter the web address that was on their yellow slip of paper. This address led them to the Dropbox (Houston & Ferdowsi, 2013) hosted website that had four sets of condition dependent personal trainer pictures. Each set of pictures could be accessed via links labeled "Personal Trainer 1," "Personal Trainer 2," "Personal Trainer 3," and "Personal Trainer 4."

Once both the survey website and accompanying picture website were open, the participants were allowed to begin the survey. The survey began with an informed consent that asked the participants to either agree or disagree. If they chose to disagree, their participation in the study ended and they were allowed to leave. The next screen that they

saw prompted them to enter their condition. The condition was on their yellow slip of paper and was depicted as a letter and number (i.e., A2). Once the condition was entered the participant began the survey. When a participant was finished with their survey, they were allowed to log off the computer and leave. Data collection sessions ranged in size from one to approximately 20 people.

Lubker et al. (2005) utilized a procedure similar to the aforementioned and incorporated a similar survey rationale. Using a self-developed First Impression Questionnaire (FIQ), they collected demographic information, perceived performance enhancement consultant (PEC) characteristics, and how influential PEC build, gender, ethnicity, and clothing was on impacting participant ratings of 11 PEC pictures. Similar to Lubker et al. (2005), the present study had participants complete a demographic form, questionnaires designed to collect participant perceptions of personal trainer characteristics (i.e., competence, knowledge, personality and behavioral attributes, and sexual orientation), and a free-response questionnaire asking participants' to explain the rationale for their answers.

## CHAPTER 4

### **Results and Discussion**

The purpose of this study was to investigate whether personal trainer physique influences individuals' perceptions of their (a) competence as a trainer, (b) level of personal training knowledge, (c) behavioral attributions, and (d) sexual orientation. The following chapter will present the results of the current study.

#### **Results**

Within the following chapter the results will be presented in the following order: (a) personal trainer competence, (b) personal trainer knowledge, (c) personal trainer behavioral attributions, (d) personal trainer sexual orientation, (e) preferred personal trainer gender, and (f) qualitative measure analysis. SPSS version 19 was used (IBM Software, n.d.).

##### **Personal trainer competence.**

To reduce the repetitiveness of the data, questions two through nine from Appendix C were compressed into one composite variable for each picture condition. This effectively reduced the number of dependent variables from ten to one. The single composite variable represents participants' overall perception of each pictured trainer's personal training competence level. Each measure within the scale was based on a Likert-type response of one ("Not at All") to six ("Extremely"). Therefore, the highest score possible for each picture condition was 48 which represented a greater perceived personal training competence.

To assess how personal trainers' muscularity and body type interacted to impact individuals' perceptions of the trainers' competence, a 4 (personal trainer muscularity: muscular male, muscular female, non-muscular male, or non-muscular female) x 3 (body type: ectomorph, mesomorph, or endomorph) mixed analysis of variance (ANOVA) with repeated measures on the first factor was conducted. Independence of observations, equality

of covariances, and normality were checked and met. The assumption of sphericity was violated; therefore the Greenhouse-Geisser  $F$ -Ratio correction was made.

Significant differences were found across the pictures,  $F(2.30, 343.01) = 150.68, p < .001$ , partial  $\eta^2 = .50$ . The interaction between personal trainer muscularity and body type was also statistically significant,  $F(4.60, 343.01) = 4.38, p = .001$ , partial  $\eta^2 = .06$ . This suggests that the personal trainer muscularity assessments were not consistent across all body types. Means and standard errors are displayed in Table 1. Least significant difference (LSD) post hoc tests were run ( $p < .05$ ) to examine the simple main effects.

Within the ectomorph and endomorph body type conditions, the muscular male and female pictures were equally perceived to possess significantly more personal training competence than the non-muscular male and female pictures. In turn, the non-muscular male was perceived to be significantly more competent than the non-muscular female.

Differing from the previous body type conditions, the mesomorph muscular male was perceived to possess significantly more personal training competence than the muscular female. With this difference, the muscular female was still perceived to be significantly more competent than both the non-muscular male and female pictures. Participants perceived the non-muscular male and female pictures to possess an equal amount of competence.

Table 1

*Perceived Personal Training Competence, Means and Standard Errors for Body Type and Muscularity*

<i>n</i>	Body Type	Muscularity	<i>M</i>	<i>SE</i>
46	Ectomorph	Muscular Male	36.59 <sub>a</sub>	.94
		Muscular Female	36.85 <sub>a</sub>	.96
		Non-muscular Male	30.96 <sub>b</sub>	1.14
		Non-muscular Female	27.87 <sub>c</sub>	1.17
64	Mesomorph	Muscular Male	37.03 <sub>a</sub>	.79
		Muscular Female	34.98 <sub>b</sub>	.81
		Non-muscular Male	26.92 <sub>c</sub>	.97
		Non-muscular Female	25.14 <sub>c</sub>	.99
42	Endomorph	Muscular Male	34.64 <sub>a</sub>	.98
		Muscular Female	32.69 <sub>a</sub>	1.00
		Non-muscular Male	28.67 <sub>b</sub>	1.19
		Non-muscular Female	21.00 <sub>c</sub>	1.22

*Note.* Mean scores vary between 8 and 48. Higher ratings indicate that participants perceived the personal trainer to possess a greater level of personal training competence. Within columns, means possessing different subscripts significantly differed ( $p < .05$ ). Subscripts across body type conditions should not be compared.

### **Personal trainer knowledge.**

A composite variable for perceived personal training knowledge was again used to reduce the repetitiveness of the data. Specifically, questions one through ten from Appendix D were compressed into one composite variable for each picture condition. The number of dependent variables was reduced to one from a total of ten. The single variable represents participants' overall perception of each pictured trainer's personal training knowledge. Each measure within the questionnaire was based on a Likert-type scale of one ("Not at All") to six ("Extremely"). Therefore, the highest score possible for each picture condition was 60. A higher score represents greater perceived personal training knowledge.

To assess how personal trainers' muscularity and body type interacted to impact individuals' perceptions of the trainers' personal training knowledge, a 4 (personal trainer

muscularity: muscular male, muscular female, non-muscular male, or non-muscular female) x 3 (body type: ectomorph, mesomorph, or endomorph) mixed ANOVA with repeated measures on the first factor was conducted. Independence of observations, equality of covariances, and normality were checked and met. The assumption of sphericity was violated; therefore the Greenhouse-Geisser  $F$ -Ratio correction was made.

Significant differences were found across the pictures,  $F(2.43, 365.11) = 54.80, p < .001$ , partial  $\eta^2 = .27$ . The interaction between personal trainer muscularity and body type was also statistically significant,  $F(4.87, 365.11) = 2.32, p = .045$ , partial  $\eta^2 = .03$ . This suggests that the personal trainer muscularity assessments were not consistent across all body types. Means and standard errors are displayed in Table 2. LSD post hoc tests were run ( $p < .05$ ) to examine the simple main effects.

Concerning the ectomorph body type condition, the muscular male and female were equally perceived to be significantly more knowledgeable about personal training than both the non-muscular male and female. Additionally, the non-muscular male was perceived to be significantly more knowledgeable than the non-muscular female.

Within the mesomorph body type condition the muscular male and female were equally perceived to be significantly more knowledgeable about personal training than both the non-muscular male and female. The non-muscular male and female were perceived to be equally knowledgeable.

For the endomorph body type condition the muscular male and female were again equally perceived to possess the same amount of personal training knowledge. Different from the previous body type conditions, however, the muscular female was perceived to only possess significantly more knowledge than the non-muscular female. The muscular male was perceived to possess significantly more knowledge than the non-muscular male and female.

In turn, the non-muscular male was perceived to possess significantly more knowledge than the non- muscular female.

Table 2

*Perceived Personal Training Knowledge, Means and Standard Errors for Body Type and Muscularity*

<i>n</i>	Body Type	Muscularity	<i>M</i>	<i>SE</i>
49	Ectomorph	Muscular Male	39.59 <sub>a</sub>	1.14
		Muscular Female	41.63 <sub>a</sub>	1.13
		Non-muscular Male	36.76 <sub>b</sub>	1.23
		Non-muscular Female	33.74 <sub>c</sub>	1.22
58	Mesomorph	Muscular Male	40.40 <sub>a</sub>	1.05
		Muscular Female	39.45 <sub>a</sub>	1.04
		Non-muscular Male	33.78 <sub>b</sub>	1.13
		Non-muscular Female	32.45 <sub>b</sub>	1.12
46	Endomorph	Muscular Male	35.94 <sub>a</sub>	1.18
		Muscular Female	35.17 <sub>a</sub>	1.17
		Non-muscular Male	33.24 <sub>b</sub>	1.27
		Non-muscular Female	27.07 <sub>c</sub>	1.26

*Note.* Mean scores vary between 10 and 60. Higher ratings indicate that participants perceived the personal trainer to possess a greater level of personal training knowledge. Within columns, means possessing different subscripts significantly differed ( $p < .05$ ). Subscripts across body type conditions should not be compared.

### **Personal trainer behavioral attributions.**

To assess how personal trainers' muscularity and body type impacted individuals' perceptions of their behavioral attributes, a 4 (personal trainer muscularity: muscular male, muscular female, non-muscular male, or non muscular female) x 3 (body type: ectomorph, mesomorph, or endomorph) x 9 (Behavioral Attribution Questionnaire) mixed multiple analysis of variance (MANOVA) with repeated measures on the first factor was conducted. Independence of observations and normality were checked and met. Equality of covariances was violated; therefore Pillai's trace *F*-ratio is reported.

Statistically significant multivariate effects were found for the main effects of body type, Pillai's trace = .30,  $F(18, 320) = 3.08$ ,  $p < .001$  multivariate  $\eta^2 = .15$ , and muscularity, Pillai's trace = .84,  $F(27, 141) = 27.67$ ,  $p < .001$ , multivariate  $\eta^2 = .84$ . There was also significant multivariate interactions between personal trainer muscularity and body type, Pillai's trace = .53,  $F(54, 284) = 1.88$ ,  $p = .001$ , multivariate  $\eta^2 = .26$ . Thus follow-up univariate ANOVA's were run for each measure. See Table 3 for means and standard errors.

**Mean vs. Kind.** For the perceived behavioral attribute spectrum of mean versus kind, there was a significant condition effect,  $F(2, 167) = 5.44$ ,  $p = .005$ , partial  $\eta^2 = .06$ . LSD post hoc analyses found that participants perceived the ectomorph personal trainer pictures to be significantly kinder than the endomorphs ( $MD = .48$ ,  $SE = .15$ ,  $p = .002$ ). It was also found that participants perceived the mesomorph personal trainer pictures as being more kind than the endomorphs ( $MD = .35$ ,  $SE = .14$ ,  $p = .01$ ).

The following perceived behavioral attribute spectrums of lazy versus hardworking, sad vs. happy, noncompetitive vs. competitive, nonfeminine vs. feminine, and aggressive vs. unaggressive were influenced by the interaction of the independent variables of personal trainer body type and muscularity. Independence of observations and normality were checked and met. Sphericity and equality of covariances were violated; therefore the Greenhouse-Geisser  $F$ -ratio is reported.

**Lazy vs. Hardworking.** Univariate testing found significant differences existed in participants' perceptions of the pictured personal trainers' work ethic,  $F(5.02, 419.5) = 2.63$ ,  $p = .023$ , partial  $\eta^2 = .03$ . Personal trainer muscularity and body type interacted to produce the following results. See Table 3 for means and standard errors.

For both the ectomorphic and mesomorphic body type conditions, the non-muscular female was perceived as significantly more lazy than the non-muscular male, muscular male, and muscular female.



Within the endomorphic body type condition the non-muscular female was seen as significantly less hardworking than the non-muscular male. In turn, the non-muscular male was perceived as significantly less hardworking than the muscular female. The muscular male was seen as the most hardworking.

***Sad vs. Happy.*** Univariate testing found significant differences existed in participants' perceptions of the pictured personal trainers' happiness,  $F(5.14, 429.41) = 4.91$ ,  $p < .001$ , partial  $\eta^2 = .06$ . Personal trainer muscularity and body type interacted to produce the following results. See Table 3 for means and standard errors.

Within the ectomorphic body type condition, the non-muscular female was perceived to be significantly less happy than the non-muscular male. In turn, the non-muscular male was perceived to be significantly less happy than the muscular female. The muscular male was perceived to be significantly happier than the non-muscular female, equal in happiness to the non-muscular male, and significantly less happy than the muscular female.

Concerning the mesomorph body type condition, the non-muscular female was seen as significantly less happy than the non-muscular male. Both the muscular male and female were perceived to be equal in happiness while also being significantly happier than the non-muscular pictures.

For the endomorph body type condition, the non-muscular female was perceived to be significantly less happy than both the non-muscular male and muscular female. The non-muscular male and muscular female were perceived to possess similar levels of happiness. The muscular male was perceived to be significantly happier than all the other pictures.

***Noncompetitive vs. Competitive.*** Univariate testing found significant differences existed in participants' perceptions of the pictured personal trainers' competitiveness,  $F(5.22, 436.19) = 3.36$ ,  $p = .005$ , partial  $\eta^2 = .04$ . Personal trainer

muscularity and body type interacted to produce the following results. See Table 3 for means and standard errors.

Concerning the ectomorph body type condition, the non-muscular female was perceived to be significantly less competitive than the non-muscular male. In turn, the non-muscular male was perceived to be significantly less competitive than both the muscular male and female. The muscular male and female were perceived to possess similar levels of competitiveness.

Within the mesomorph body type condition, the non-muscular male and female were perceived to possess similar levels of competitiveness. The muscular female was perceived to be significantly more competitive than both the non-muscular male and female. In turn, the muscular male was perceived to be significantly more competitive than the muscular female.

For the endomorph body type condition, the non-muscular female was perceived to be significantly less competitive than the non-muscular male. The non-muscular male was perceived to be significantly less competitive than the muscular female. The muscular male was perceived to be the significantly more competitive than the other three pictures.

*Nonfeminine vs. Feminine.* Univariate testing found significant differences existed in participants' perceptions of the pictured personal trainers' femininity,  $F(5.25, 438.28) = 3.20, p = .007$ , partial  $\eta^2 = .04$ . Personal trainer muscularity and body type interacted to produce the following results. See Table 3 for means and standard errors.

Within the ectomorph and mesomorph body type conditions, the muscular male was perceived to be significantly less feminine than the other three pictures. The non-muscular male was rated to be significantly less feminine than the muscular and non-muscular female pictures. The muscular and non-muscular female pictures were perceived to possess equal amounts of femininity.

The endomorph body type condition was similar to the ectomorph and mesomorph conditions with the variation that the muscular and non-muscular female pictures were not rated similarly on femininity. The non-muscular female was perceived to be significantly more feminine than the muscular female.

*Aggressive vs. Unaggressive.* Univariate testing found significant differences existed in participants' perceptions of the pictured personal trainers' aggressiveness,  $F(4.96, 414.19) = 3.8, p = .002, \text{partial } \eta^2 = .04$ . Personal trainer muscularity and body type interacted to produce the following results. See Table 3 for means and standard errors.

Within the ectomorph and mesomorph body type condition, the muscular male was perceived as significantly more aggressive than the muscular female. The non-muscular male and female pictures were perceived to be equally aggressive; however, their aggressiveness was rated to be significantly less than both the muscular male and female pictures.

The endomorphic body type condition was similar to the ectomorph and mesomorph conditions with the variation that the non-muscular male and female pictures were not rated similarly on aggressiveness. The non-muscular male was perceived to be significantly more aggressive than the non-muscular female.

*Serious vs. Humorous, Insensitive vs. Sensitive, and Introverted vs. Extroverted.* For the measures of serious vs. humorous, insensitive vs. sensitive, and introverted vs. extroverted there were no significant main effects. As such, interaction effects were not explored.

Table 3

*Perceived Personal Trainer Behavioral Attributes, Means and Standard Errors for Body Type and Muscularity*

Attribute Spectrum	<i>n</i>	Body Type	Muscularity	<i>M</i>	<i>SE</i>
Lazy vs. Hardworking	52	Ectomorph	Muscular Male	5.54 <sub>a</sub>	.19
			Muscular Female	5.60 <sub>a</sub>	.17
			Non-muscular Male	4.00 <sub>b</sub>	.20
			Non-muscular Female	3.31 <sub>c</sub>	.18
Lazy vs. Hardworking	68	Mesomorph	Muscular Male	5.62 <sub>a</sub>	.16
			Muscular Female	5.28 <sub>a</sub>	.15
			Non-muscular Male	3.40 <sub>b</sub>	.17
			Non-muscular Female	2.90 <sub>c</sub>	.15
Lazy vs. Hardworking	50	Endomorph	Muscular Male	5.14 <sub>a</sub>	.19
			Muscular Female	4.78 <sub>b</sub>	.18
			Non-muscular Male	3.34 <sub>c</sub>	.20
			Non-muscular Female	1.98 <sub>d</sub>	.18
Sad vs. Happy	52	Ectomorph	Muscular Male	4.79 <sub>b</sub>	.15
			Muscular Female	5.19 <sub>a</sub>	.15
			Non-muscular Male	4.58 <sub>b</sub>	.15
			Non-muscular Female	4.00 <sub>c</sub>	.16
Sad vs. Happy	68	Mesomorph	Muscular Male	5.27 <sub>a</sub>	.13
			Muscular Female	5.21 <sub>a</sub>	.13
			Non-muscular Male	4.35 <sub>b</sub>	.13
			Non-muscular Female	3.63 <sub>c</sub>	.14
Sad vs. Happy	50	Endomorph	Muscular Male	4.76 <sub>a</sub>	.15
			Muscular Female	4.30 <sub>b</sub>	.15
			Non-muscular Male	4.24 <sub>b</sub>	.15
			Non-muscular Female	2.88 <sub>c</sub>	.17

Table 3 (Cont.)

*Perceived Personal Trainer Behavioral Attributes, Means and Standard Errors for Body Type and Muscularity*

Attribute Spectrum	<i>n</i>	Body Type	Muscularity	<i>M</i>	<i>SE</i>
Non-competitive vs. Competitive	52	Ectomorph	Muscular Male	5.58 <sub>a</sub>	.19
			Muscular Female	5.31 <sub>a</sub>	.19
			Non-muscular Male	3.75 <sub>b</sub>	.19
			Non-muscular Female	3.15 <sub>c</sub>	.18
Non-competitive vs. Competitive	68	Mesomorph	Muscular Male	5.59 <sub>a</sub>	.16
			Muscular Female	5.10 <sub>b</sub>	.17
			Non-muscular Male	3.16 <sub>c</sub>	.17
			Non-muscular Female	2.91 <sub>c</sub>	.15
Non-competitive vs. Competitive	50	Endomorph	Muscular Male	5.48 <sub>a</sub>	.19
			Muscular Female	4.88 <sub>b</sub>	.19
			Non-muscular Male	3.68 <sub>c</sub>	.20
			Non-muscular Female	2.12 <sub>d</sub>	.18
Nonfeminine vs. Feminine	52	Ectomorph	Muscular Male	2.02 <sub>c</sub>	.15
			Muscular Female	4.40 <sub>a</sub>	.22
			Non-muscular Male	3.89 <sub>b</sub>	.21
			Non-muscular Female	4.37 <sub>a</sub>	.24
Nonfeminine vs. Feminine	68	Mesomorph	Muscular Male	1.68 <sub>c</sub>	.13
			Muscular Female	4.68 <sub>a</sub>	.19
			Non-muscular Male	3.53 <sub>b</sub>	.18
			Non-muscular Female	4.77 <sub>a</sub>	.21
Nonfeminine vs. Feminine	50	Endomorph	Muscular Male	1.68 <sub>d</sub>	.15
			Muscular Female	3.78 <sub>b</sub>	.23
			Non-muscular Male	2.54 <sub>c</sub>	.21
			Non-muscular Female	4.40 <sub>a</sub>	.24

Table 3 (Cont.)

*Perceived Personal Trainer Behavioral Attributes, Means and Standard Errors for Body Type and Muscularity*

Attribute Spectrum	<i>n</i>	Body Type	Muscularity	<i>M</i>	<i>SE</i>
Aggressive vs. Unaggressive	52	Ectomorph	Muscular Male	3.35 <sub>b</sub>	.17
			Muscular Female	3.92 <sub>a</sub>	.18
			Non-muscular Male	4.75 <sub>c</sub>	.18
			Non-muscular Female	4.44 <sub>c</sub>	.22
Aggressive vs. Unaggressive	68	Mesomorph	Muscular Male	2.93 <sub>c</sub>	.15
			Muscular Female	3.79 <sub>b</sub>	.16
			Non-muscular Male	4.85 <sub>a</sub>	.16
			Non-muscular Female	4.84 <sub>a</sub>	.19
Aggressive vs. Unaggressive	50	Endomorph	Muscular Male	2.60 <sub>d</sub>	.17
			Muscular Female	3.62 <sub>c</sub>	.19
			Non-muscular Male	4.16 <sub>b</sub>	.18
			Non-muscular Female	5.20 <sub>a</sub>	.22

*Note.* Mean scores vary between 1 and 7. Higher ratings indicate that participants perceived the personal trainer to possess a greater level of the specified behavioral attribute. Within columns, means possessing different subscripts significantly differed ( $p < .05$ ). Subscripts across body type conditions should not be compared.

**Personal trainer sexual orientation.**

The following statistics are based on Appendix F which contained one measure. The single item measure was represented by a zero (“Exclusively heterosexual”) to six (“Exclusively homosexual”) Likert-type scale.

To assess how personal trainers’ muscularity and body type interacted to impact individuals’ perceptions of the trainers’ sexual orientation, a 4 (personal trainer muscularity: muscular male, muscular female, non-muscular male, or non-muscular female) x 3 (body type: ectomorph, mesomorph, or endomorph) mixed ANOVA with repeated measures on the first factor was conducted. Independence of observations and normality were checked and met. Sphericity and equality of covariances were violated; therefore the Greenhouse-Geisser *F*-ratio correction was made.

Significant differences were found across the pictures,  $F(2.87, 536.67) = 32.19, p < .001$ , partial  $\eta^2 = .15$ . The interaction between personal trainer muscularity and body type was also statistically significant,  $F(5.74, 536.67) = 2.39, p = .03$ , partial  $\eta^2 = .03$ . This suggests that the personal trainer muscularity assessments were not consistent across all body types. Means and standard errors are displayed in Table 4. LSD post hoc tests were run ( $p < .05$ ) to examine the simple main effects.

Within the ectomorph body type picture condition, the muscular male was perceived to be significantly more heterosexual than the muscular female, non-muscular male, and the non-muscular female. The muscular female was perceived to be significantly more heterosexual than both the non-muscular male and female. Participants did not perceive the non-muscular male and female to possess significantly different sexual orientations, although they were still perceived as possessing predominantly heterosexual sexual orientations.

Concerning the mesomorph body type picture condition, the muscular male was perceived to be significantly more heterosexual than the muscular female, non-muscular male, and the non-muscular female. Participants did not perceive the muscular female, non-muscular male, and the non-muscular female to possess significantly different sexual orientations, although they were still perceived as possessing predominantly heterosexual sexual orientations.

For the endomorph body type picture condition, the muscular male was perceived to be significantly more heterosexual than the muscular female, non-muscular male, and the non-muscular female. The muscular female was perceived to be significantly more homosexual than the non-muscular male, but was also perceived as possessing the same relative sexual orientation as the non-muscular female. Thus, the non-muscular male and female were perceived as possessing the same, predominantly heterosexual, sexual orientation.

Table 4

*Perceived Personal Trainer Sexual Orientation, Means and Standard Errors for Body Type and Muscularity*

<i>n</i>	Body Type	Muscularity	<i>M</i>	<i>SE</i>
63	Ectomorph	Muscular Male	0.86 <sub>c</sub>	.16
		Muscular Female	1.56 <sub>b</sub>	.19
		Non-muscular Male	2.13 <sub>a</sub>	.20
		Non-muscular Female	2.02 <sub>a</sub>	.20
71	Mesomorph	Muscular Male	0.63 <sub>b</sub>	.15
		Muscular Female	1.51 <sub>a</sub>	.18
		Non-muscular Male	1.62 <sub>a</sub>	.19
		Non-muscular Female	1.78 <sub>a</sub>	.19
56	Endomorph	Muscular Male	0.75 <sub>c</sub>	.17
		Muscular Female	2.04 <sub>a</sub>	.20
		Non-muscular Male	1.43 <sub>b</sub>	.21
		Non-muscular Female	1.75 <sub>ab</sub>	.22

*Note.* Mean scores vary between 0 and 6. Higher ratings indicate that participants perceived the personal trainer to possess a greater level of homosexuality. Within columns, means possessing different subscripts significantly differed ( $p < .05$ ). Subscripts across body type conditions should not be compared.

### **Preferred personal trainer gender.**

To assess whether there were significant differences between the male and female participants' preferences for the personal trainer gender they would like to work with, a 2 (participant gender: male or female) x 3 (personal trainer gender preference: male, female, or no preference) Chi-square test was used. The result of the Chi-square test found that  $\chi^2 = 21.76, p < .001$ , Cramer's  $V = .34$ . See Figure 1 for a graphical representation of frequency counts.



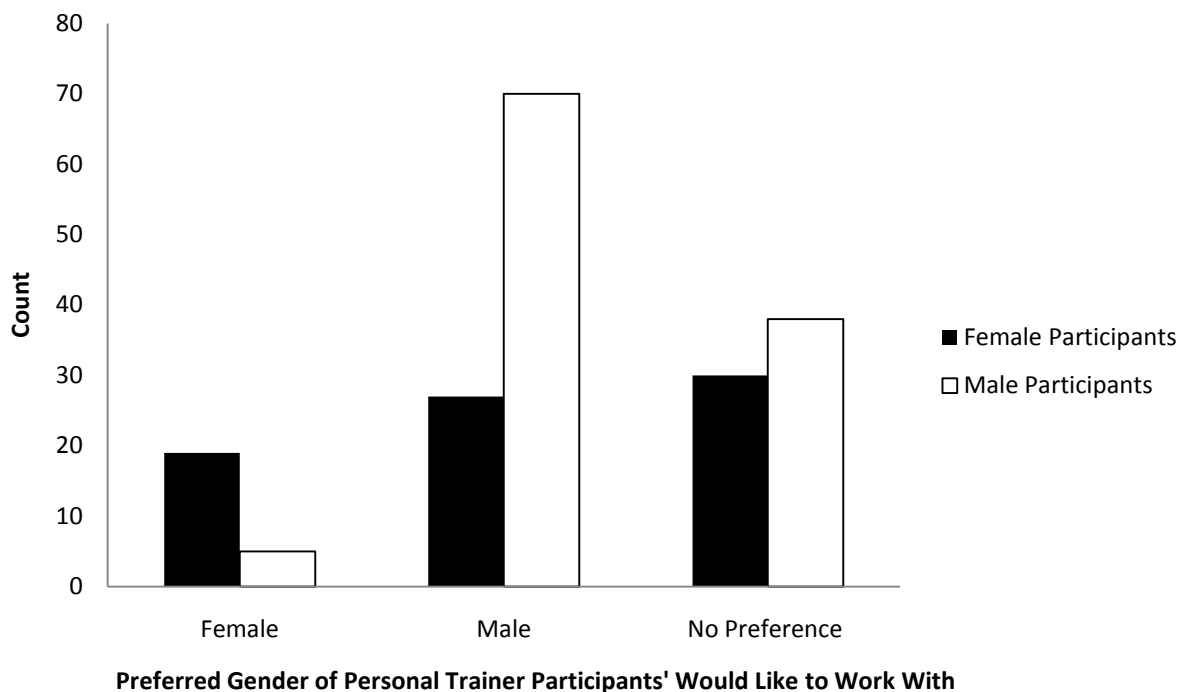


Figure 1. Participants' preferences for male or female personal trainers.

### Qualitative Measure Analysis

For the qualitative portion of the study (Appendix G), participants were asked to briefly explain why and how they rated the pictures of the personal trainers. It should be cautioned that while being qualitative in nature, the brevity of the responses and the mixed-methods approach used in this study limited the emergence of concrete themes. What follows is a presentation of the frequency counts of written responses made by participants.

For the impact that physique has on perceived personal trainer competence, 9.4% expressed that the physique of the pictures did not impact their competence ratings. Of the participants, 78.5% expressed that the pictured physique of the trainers influenced their competence ratings. Additionally, 4.7% participant responses did not make sense or directly answer the question and 7.3% did not answer the question.

For the impact that physique has on perceived personal trainer knowledge, 24.1% participants expressed that the physique of the pictures did not impact their competence

ratings. Of the participants, 60.7% expressed that the pictured physique of the trainers influenced their competence ratings. Additionally, 6.8% did not make sense or directly answer the question and 8.4% did not answer the question.

For the impact that physique has on perceived personal trainer behavioral attributions, 20.9% participants expressed that the physique of the pictures did not impact their behavioral attribution ratings. Of the participants, 65.4% expressed that the pictured physique of the trainers influenced their behavioral attribution ratings. Additionally, 5.2% did not make sense or directly answer the question and 8.4% did not answer the question.

For the impact that physique has on perceived personal trainer sexual orientation, 48.7% expressed that the physique of the pictures did not impact their competence ratings. Of the participants, 31.9% expressed that the pictured physique of the trainers influenced their sexual orientation ratings. Additionally, 10.5% did not make sense or directly answer the question and 8.9% did not answer the question. It should also be noted that many of the participants stated that they either guessed on or answered all the perceived sexual orientation questions similarly because the physiques of the personal trainers were not influential in this category.

## **Discussion**

The purpose of this study was to investigate how personal trainer physique influenced participants' perceptions. Specifically, the concepts investigated were perceived (a) personal training competence, (b) level of personal training knowledge, (c) behavioral attributes, and (d) sexual orientation. Within the following dialogue all of the investigated concepts will be discussed and linked to similar research.

### **Competence**

The results indicate that physique significantly influenced individuals' perceptions of the trainers' personal training competence. Muscularity and body type played a large role in

influencing participants' responses. In all three body type conditions, muscular trainers, regardless of gender were perceived to be significantly more competent than their non-muscular counterparts. Overall, male personal trainers, while sometimes perceived to be equal in competence to their female counterparts, were never rated significantly lower. Females, for some reason, were often rated significantly lower in competence than their male counterparts.

These quantitative results mirror the qualitative findings of Melton et al. (2008) and Melton et al. (2010). Melton et al. (2008) reported personal trainers vocalizing the benefits of having an in-shape physique as being conducive to attracting clients. For-profit managers also claimed that a personal trainer's physique is an important aspect to consider when hiring a trainer to work at their gym (Melton et al., 2010). In the case of this study, muscular personal trainers were perceived to be significantly more competent than their non-muscular peers. These findings highlight how an in-shape physique influences one's perceptions of a personal trainer as being competent in the field of personal training—more so than trainers who are out of shape or non-muscular.

### **Knowledge**

In all three body type conditions the muscular male and female trainers were again perceived to have significantly more personal training knowledge than their non-muscular counterparts. Different from perceived competence, the muscular male and females were perceived to be equally knowledgeable within the personal training field. Except for the mesomorph body type condition (perceived to be equal in knowledge), non-muscular males were rated to be significantly more knowledgeable about personal training than the non-muscular females.

Lubker et al. (2005) support the current findings concerning perceived personal training knowledge. They found that pictured lean build/academically dressed Caucasian

male performance enhancement consultant were perceived to be more knowledgeable about sport knowledge than their large build/academically dressed counterparts. While sport knowledge is not the same as personal training knowledge, the knowledge concept remains similar between the two studies.

### **Behavioral Attributions**

For the lazy vs. hardworking Likert-type bipolar scale, muscular males and females across all body types were perceived as significantly more hardworking than their non-muscular counterparts. Females within all body type conditions, regardless of their muscularity, were often perceived to be significantly less hardworking than the male personal trainer pictures. This was often true for the non-muscular body type condition.

Butler et al. (1993) revealed that participants perceived illustrations of male and female mesomorphs ( $M = 5.29$ ) and ectomorphs ( $M = 4.79$ ) to be significantly more hard working than endomorphic ( $M = 3.51$ ) illustrations. While they did not manipulate muscularity of the presented illustrations, participants may have perceived the endomorphic body types to be less hard working because they possessed a larger physique with more visible body fat. If this is the case, the current study follows a similar trend of less muscular individuals being perceived as less hardworking than their more defined counterparts. More research, however, is needed to verify this claim.

Within the sad vs. happy Likert-type bipolar scale, the ectomorphic muscular female was perceived to be significantly happier than the ectomorphic muscular male personal trainer and equal in happiness to the ectomorphic non-muscular male. This finding ends the trend of muscular males receiving more favorable perceptions. Within the mesomorph and endomorph body type conditions, muscular males were perceived to be significantly happier than all other pictured personal trainers. The general trend of male and muscular personal

trainers being perceived more favorable continues within this measure, but the differences are not as linear.

Concerning the sad vs. happy bipolar scale, Butler et al. (1993) discovered that participants once again rated mesomorphs ( $M = 4.47$ ) and ectomorphs ( $M = 4.14$ ) significantly more positively than the endomorphic illustrations ( $M = 3.62$ ). The current study revealed that as body size increased, participants' mean perceptions of the non-muscular male and female personal trainers' happiness level decreased (especially for the non-muscular female). This trend was not reflected for the muscular trainers. Mean perceptions of their level of happiness did not start to decrease until body size increased from mesomorph to endomorph. The two studies once again share the similarity where body fat is possibly viewed as a negative trait, reducing perceived positive characteristics. More research is needed to verify this claim however.

Participants' ratings on the Likert-type bipolar scale of noncompetitive vs. competitive placed the muscular male and female pictured personal trainers as significantly more competitive than their non-muscular counterparts. This was seen across all body type conditions. Females in all body type conditions, regardless of their level of muscularity, were often rated significantly less competitive than their male counterparts.

Butler et al. (1993) revealed that participants perceived the mesomorphic body type to be significantly more competitive ( $M = 5.26$ ) than the ectomorphic ( $M = 4.05$ ) and endomorphic ( $M = 3.35$ ) illustrations. The current study found that participants perceived the muscular body types of personal trainers to be significantly more competitive than their non-muscular peers. This could again be due to the amount of body fat visible. If so, the results are similar. More research is needed, however, to discern if body fat influences perceptions of competitiveness.

Concerning femininity, the muscular male personal trainer in all body type conditions

was perceived to be significantly less feminine than all other trainer pictures. The non-muscular male was perceived to be significantly less feminine than both the muscular and non-muscular female pictures across all body types. Lastly, within the ectomorphic and mesomorphic body type conditions, the non-muscular female was perceived to be significantly more feminine than the muscular and non-muscular male. A difference is seen in the endomorphic condition where the non-muscular female is perceived to be significantly more feminine than both male pictures and the muscular female. These results indicate that muscularity and a large body size may have led participants to perceive the pictured trainers possessing these traits as being less feminine.

Butler et al. (1993) discovered that the mesomorphic ( $M = 3.26$ ) and ectomorphic ( $M = 4.30$ ) illustrations presented to participants received significantly different ratings. However, neither were significantly different from the endomorphic condition ( $M = 3.66$ ). It appears that the findings from Butler et al. (1993) show a trend where muscularity and a large body type predisposed participants to perceive less femininity—similar to the present study.

Concerning the Likert-type bipolar scale of aggressive vs. unaggressive, the pictured muscular personal trainers were rated as being significantly more aggressive than their non-muscular counterparts. More specifically, muscular males were perceived to be significantly more aggressive than all other pictured trainers. These perceptions of high aggression occurred across all body types. It can be debated whether aggression is a favorable behavioral trait. Regardless, the trend of male and/or muscular pictured trainers receiving a significantly extreme score continues the trend seen across competence, knowledge, and many of the discussed behavioral attributes.

Butler et al. (1993) revealed that mesomorph illustrations were perceived significantly more aggressive ( $M = 2.92$ ) than both the ectomorph ( $M = 4.71$ ) and endomorph

( $M = 4.59$ ) illustrations. The inherent muscularity of the mesomorphic illustration presented within that study may have swayed participants to rate the figure as very aggressive. This statement holds if one considers the results found by the current study. Across all body type conditions the muscular trainers (male and female) mean aggression ratings were lower than their non-muscular counterparts. More research, however, is needed to support this claim.

### **Sexual Orientation**

The results for personal trainer sexual orientation illustrate that the participants predominantly rated all pictured personal trainers as heterosexual. While there were no significant differences between body type conditions, there were significant differences within body type conditions. One finding was that across all body types, the muscular male was perceived to be significantly more heterosexual than all other pictured personal trainers. Therefore, muscular male personal trainers may be perceived significantly more heterosexual than muscular female trainers, non-muscular male trainers, and non-muscular female trainers.

Lastly, the reader should be aware that many participants indicated that they could not discern a sexual orientation for the trainers from their physique. Some participants went as far as to state that they randomly guessed or simply rated all the pictures as heterosexual. This may have been due to the fact that the participants were presented static pictures of the trainers. Johnson et al. (2007) had more success with participants judging sexual orientation when computer generated animations and dynamic outlines of volunteers were used.

Another possibility may be that participants did not care about identifying the trainers' sexual orientations. The young college age sample and the ever increasing societal acceptance of differing sexual orientations may have also resulted in these findings. Specifically, some participants wrote in the free response questionnaire that this question was insensitive or unimportant to the field of personal training. As such, caution should be used when interpreting these results.

## CHAPTER 5

### **Summary, Findings, General Conclusions, Applications, and Recommendations**

The purpose of this study was to investigate how the physique of a personal trainer impacts individuals' perceptions. Specifically, the investigation examined how personal trainer physique influences an individual's perception of his/her: (a) competence as a trainer, (b) level of personal training knowledge, (c) behavioral attributions, and (d) sexual orientation. To investigate these core questions, the following research question and sub questions were developed:

1. How does the physique of a personal trainer, as viewed in color picture format on a computer screen, influence the perceptions of individuals (and therefore potential clients)?
  - a. How does the physique of a personal trainer influence other's perceptions of his/her competence as a personal trainer?
  - b. How does the physique of a personal trainer influence other's perceptions of his/her level of personal training knowledge?
  - c. How does the physique of a personal trainer influence other's perceptions of his/her behavioral attributions?
  - d. How does the physique of a personal trainer influence other's perceptions of his/her sexual orientation?

### **Summary**

Male and female undergraduate students ( $N = 191$ ) who attended an upstate public university were shown anatomical pictures of individuals labeled as personal trainers. Based on the physiques emphasized by the pictures, participants were asked to rate the trainers on their competence, knowledge, behavioral attributes, and sexual orientation. Information was



gathered using electronic surveys, each selected to collect information as it related to the specific research question.

For the qualitative questionnaire, tallies were counted for the number of participants who explicitly stated or alluded to the pictured trainers' physique impacting their quantitative ratings. The primary researcher and a member of the committee analyzed the quantitative data. The researcher analyzed the qualitative data himself.

## **Findings**

From the qualitative and quantitative data, the following distinct findings were made:

1. Personal trainer physique significantly influences individuals' perceptions of trainer competence, knowledge, and behavioral attributes.
2. Muscular male and female personal trainers across all body types were often perceived to be significantly more competent and knowledgeable than their non-muscular counterparts.
3. Muscular male and female personal trainers across all body types were often perceived to be more hardworking than their non-muscular counterparts.
4. Muscular male and female personal trainers across all body types were often perceived to be happier than their non-muscular counterparts, although this was not as clear as perceived work ethic.
5. Muscular males and females across all body type conditions were perceived to be significantly more competitive and aggressive than their non-muscular counterparts.
6. Individuals' possessing a larger, muscular body type increased individuals' ratings of their masculinity.
7. Mean vs. kind resulted in a significant main effect for body type only. Ectomorph and mesomorph personal trainers were perceived to be significantly kinder than the endomorph trainers.

8. The pictures used in the current study did not receive significant main or interaction effects for the bipolar scales of serious vs. humorous, insensitive vs. sensitive, and introverted vs. extroverted.
9. There was the general trend of muscular and non-muscular males consistently being perceived as more competent, knowledgeable, and favorably rated on positive behavioral attributes than their female picture counterparts.
10. Discerning a personal trainer's sexual orientation solely from their pictured physique is difficult and perceived as irrelevant by some participants.

### **General Conclusions**

The current study has helped reduce the lack of literature surrounding the physique perceptions of personal trainers. Though this study is far from conclusive in every matter of the topic, distinct and significant trends were found. Specifically, it was found that the variables of body type (ectomorph, mesomorph, and endomorph) and muscularity (muscular male, muscular female, non-muscular male, and non-muscular female) of a personal trainer does influence individuals' perceptions of their competence as a trainer, knowledge of personal training, and key behavioral attributes. These findings are especially relevant because of the physique orientated nature of the personal training field.

If the results of this study are an accurate indication of college age adults' perceptions of personal trainers, females appear to be at a disadvantage when compared to males. It was shown that many more males and females (Figure 1) preferred to work with a male personal trainer. Additionally, perceptions of personal training competence and knowledge often placed the muscular female and non-muscular female below their male counterparts. Also, there is a trend of muscular males being perceived more favorably on the positive behavioral attributes of work ethic and happiness, although the trend is not as defined for overall happiness.

## **Applications**

The conclusions drawn from the current study have practical applications. New graduates within the health and fitness fields, current and recently certified personal trainers, as well as the general population can apply these findings where applicable. Additionally, recognizing and questioning the disparity between the perceptions formed of male and female personal trainers may help minimize negative stereotypes.

The positive impact that muscularity (on male and female physiques) had upon participants' perceptions of personal trainers' competence and knowledge has practical applications as well. Personal trainers who “practice what they preach” can enjoy the positive perceptions their physique most likely will produce. At its most basic level, the personal trainer is advertising that they are competent and knowledgeable through the physique they possess. Regardless if an individual has the proper credentials and experience, if they possess an appealing physique, they will most likely benefit from favorable perceptions about their personal training capabilities—something future and/or current personal trainers should keep in mind.

Lastly, personal trainers who do not possess a physique that is perfect by societal standards can also cater to niche markets. Many participants rated the muscular trainers to be more aggressive and competitive than their non-muscular counterparts. Personal trainers who are not overly muscular may appear less intimidating to clients who simply want to work out and avoid any unnecessary performance pressure. Rather than viewing a large and non-muscular physique as a detriment to business, the trainer in question could shift their marketing to cater more towards individuals who want low key, slow paced workouts. The opposite holds true for muscular personal trainers. They could very well cater to professional bodybuilders and power lifters.

## **Recommendations for Further Research**

With the current results in mind, consider the possibility of a non-muscular, endomorphic female who wanted to become a personal trainer. In order to be taken seriously in westernized society, she would have to overcome many unfavorable perceptions based solely upon her physique. To discover why a female personal trainer's physique is viewed more critically than a male's requires further research. More specifically, future research should investigate ways to ameliorate the negative perceptions female personal trainers receive when they are compared to male personal trainers.

Lastly, perceptions of a personal trainer's sexual orientation based solely upon their physique are mixed at best. Due to the broad nature of this study, valid conclusions concerning perceived personal trainer sexual orientation cannot be drawn from the collected data. The best that this study demonstrates is that the sexual orientation of a personal trainer cannot be accurately perceived via pictures. From the participant qualitative responses, the perceived sexuality of personal trainers is a delicate subject that requires more research involving participants of different age groups and ethnicities.

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## APPENDIX A

## Ectomorphic Muscular Male



## Mesomorphic Muscular Male



## Endomorphic Muscular Male



APPENDIX A (Cont.)

Ectomorphic Muscular Female



Mesomorphic Muscular Female



Endomorphic Muscular Female



## APPENDIX A (Cont.)

## Ectomorphic Non-muscular Male



## Mesomorphic Non-muscular Male



## Endomorphic Non-Muscular Male

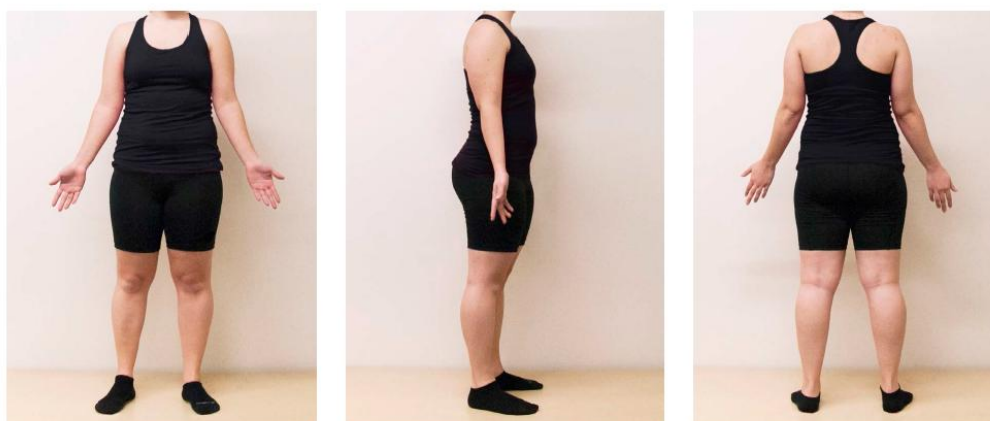


## APPENDIX A (Cont.)

## Ectomorph Non-muscular Female



## Mesomorph Non-muscular Female



## Endomorphic Non-muscular Female







## APPENDIX C

**Perceived Personal Trainer Competence Questionnaire**

Using the corresponding pictured personal trainer as a basis, please circle the number that best represents your perception of the personal trainer's competence level for each of the following statements. Your answers can vary between 1 (not at all) to 6 (extremely).

1. The personal trainer is internally motivated to stay healthy.  
Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely
2. The personal trainer has the competence to motivate others to be healthy.  
Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely
3. The personal trainer has the competence to screen and assess clients for health conditions and postural deviations.  
Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely
4. The personal trainer has the competence to understand the physiologic impact that medications may have on their clients during exercise.  
Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely
5. The personal trainer has the competence to take the proper precautions for their clients' safety. That is, to prevent injury and effectively respond during medical emergencies.  
Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely
6. The personal trainer has the competence to effectively instruct their clients on proper exercise form.  
Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely
7. The personal trainer has the competence to develop effective and safe exercise programs for their clients.  
Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely
8. The personal trainer has the competence to effectively monitor and adjust their clients' exercise programs.  
Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely
9. The personal trainer has the competence to understand their scope of practice and properly refer their clients to other specialists when needed.  
Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely

## APPENDIX C (Cont.)

10. The personal trainer believes in their competence to be an effective personal trainer.

Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely

## APPENDIX D

**Perceived Personal Trainer Knowledge Questionnaire**

Using the corresponding pictured personal trainer as a basis, please circle the number that best represents your perception of the personal trainer's knowledge for each of the following statements. Your answers can vary between 1 (not at all) to 6 (extremely).

1. The personal trainer is knowledgeable about biomechanics.  
Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely
2. The personal trainer is knowledgeable about anatomy.  
Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely
3. The personal trainer is knowledgeable about exercise physiology.  
Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely
4. The personal trainer is knowledgeable about exercise programming and management.  
Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely
5. The personal trainer is knowledgeable about behavior modification.  
Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely
6. The personal trainer is knowledgeable about nutrition.  
Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely
7. The personal trainer is knowledgeable about business management.  
Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely
8. It is likely that the personal trainer has a bachelor's degree.  
Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely
9. It is likely that the personal trainer has a master's degree.  
Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely
10. It is likely the personal trainer has a doctoral degree.  
Not at All (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) Extremely



## APPENDIX E

**Perceived Personal Trainer Behavioral Attributions Questionnaire**

Rate each item on a scale of 1 to 7 by circling the number that best represents your perception of the behavioral tendencies that the pictured personal trainer possesses. For example, for “Sloppy-Neat” a 1 would mean you perceive the personal trainer to be extremely sloppy. If you rated the personal trainer a 7, that would mean you perceive the individual to be extremely neat. If you rated the personal trainer as a 4, that would indicate you believe the individual to possess equal amounts of each trait.

1. Lazy (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) ----- (7) Hardworking
2. Serious (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) ----- (7) Humorous
3. Sad (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) ----- (7) Happy
4. Insensitive (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) ----- (7) Sensitive
5. Mean (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) ----- (7) Kind
6. Noncompetitive (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) ----- (7) Competitive
7. Nonfeminine (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) ----- (7) Feminine
8. Introverted (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) ----- (7) Extroverted
9. Aggressive (1) ----- (2) ----- (3) ----- (4) ----- (5) ----- (6) ----- (7) Unaggressive

## APPENDIX F

**Perceived Personal Trainer Sexual Orientation Questionnaire**

Please circle on a scale of 0 (Exclusively heterosexual) to 6 (Exclusively homosexual) one number that matches the sexual orientation tendencies you perceive the pictured personal trainer to currently possess.

- 0- Exclusively heterosexual
- 1- Predominantly heterosexual , only incidentally homosexual
- 2- Predominantly heterosexual, but more than incidentally homosexual
- 3- Equally heterosexual and homosexual
- 4- Predominantly homosexual, but more than incidentally heterosexual
- 5- Predominantly homosexual, only incidentally heterosexual
- 6- Exclusively homosexual

## APPENDIX G

**Free-Response Questionnaire**

Please answer each question below. Part (a) of each question is meant to guide your response. You may use it to help answer the questionnaire. However, you may identify and explain your own thoughts and experience while viewing and rating the personal trainers. Write as much as you need to make your point.

1. How influential was the physique of the personal trainers pictured in impacting your ratings of their competence as a personal trainer?
  - a. What physique characteristics impacted you the most when making your ratings of their competence? Why?
  
2. How influential was the physique of the personal trainers pictured in impacting your ratings of their knowledge as a personal trainer?
  - a. What physique characteristics impacted you the most when making your ratings of their knowledge? Why?
  
3. How influential was the physique of the personal trainers pictured in impacting your ratings of their personality and behavioral attributes?
  - a. What physique characteristics impacted you the most when making your ratings of their behavioral attributes? Why?
  
4. How influential was the physique of the personal trainers pictured in impacting your ratings of their sexual orientation?
  - a. What physique characteristics impacted you the most when making your ratings of their sexual orientation? Why?

## APPENDIX H

### **Bias Statement**

The primary researcher of this study is a 25 year old gay Caucasian male. Standing 1.78 meters tall and weighing approximately 78kg, I would describe myself as an athletic mesomorph. I am currently a master's candidate for a degree in Exercise Science at the State University of New York College at Cortland. I am also the graduate assistant for the motor behavior class (EXS 297) offered within the Kinesiology Department of Professional Studies.

I graduated from SUNY Brockport in 2010 with two bachelor degrees, Psychology and Interpersonal and Corporate Communications. I spent a large amount of time participating with the campus gay straight alliance and was the club's vice president during the latter half of my junior and entire senior year. I also worked in Dr. Ratcliff's (a psychology professor) Positive Intergroup Relations lab as part of my Psychology degree. There I helped design and conduct studies focusing on the perceptions individuals form of out-groups. I also presented a poster at the annual 2010 SPSP conference in Las Vegas, Nevada. I am thankful for my time at the lab for it gave me a deep respect and appreciation for the positive applications of research.

Unable to find a job within my desired field (corporate communication/conflict management), I worked at a natural foods store for a year. During that year I learned much about health and continued to participate in my favorite hobby and passion: exercise. After realizing where my interests lay, I decided to continue my education and pursue becoming a personal trainer. In order to achieve this goal, I realized that I needed a solid background in the field and made the decision to attend SUNY Cortland for my masters in Exercise Science.

After spending nearly three semesters at Cortland, I realized that I should play to my strengths and research the field of Sport and Exercise Psychology for my thesis. Thus, the idea came to me to study peoples' perceptions of others based upon the observed body type.

## APPENDIX H (Cont.)

From my time spent working with Dr. Ratcliff I became intrigued by individuals perceptions of others based on various characteristics. In this instance, the characteristic that I wish to explore are personal trainers and the physique they possess. Specifically, I find it professionally and personally useful to understand what opinions others may make of me and my future colleagues based solely on our physique.

Since I will be interacting with the participants of the proposed study, I will take care not to use any biased body language or speech. With the undergraduate experience that I have running participant research sessions I do not foresee this as being a large limitation of the study. In any case, my biases have been noted and I will ensure they do not interfere with the research process.

APPENDIX I  
**Statement of Informed Consent**

STATEMENT OF INFORMED CONSENT

A State University of New York, The College at Cortland Research Project

Title of Research: The Role of Appearance in Individuals' Perceptions of Personal Trainers

Principle Investigator: Patrick Boerner  
Department: Kinesiology

For this study we are interested in your opinion of characteristics possessed by personal trainers of varying physique. In the study, pictures of personal trainers will be presented to you. You will then be asked to rate the pictured personal trainers (via surveys) on characteristics such as behavioral tendencies and their knowledge of the personal training field.

I understand that:

1. I must be at least 18 years of age in order to participate in this research.
2. I must be an undergraduate student.
3. My participation is voluntary and I have the right to refuse to answer any questions.
4. My confidentiality is guaranteed. My name will not be attached to the questionnaires. There will be no way to connect me to my data. If any publication results from this research, I would not be identified by name.
5. There will be no anticipated personal risks or benefits because of my participation in this project.
6. My participation involves viewing pictures of personal trainers, reading a survey, and answering the survey questions. It is estimated that it will take no more than 30 minutes to complete the survey.
7. Data will be kept in a locked filing cabinet by the investigator.

In order to participate in this study, your informed consent is required. You are being asked to make a decision whether or not to participate in the project. If you want to participate in the project, and agree with the previous statements, please select "I agree" on the next screen that will appear. You may change your mind at any time and leave the study without penalty, even after the study has begun.

## APPENDIX I (Cont.)

## Rights as a Research Participant

If you have any questions about your rights as a research participant or concerning a research-related injury, you can call: The Institution Review Board representative at (607) 753-2511, or email [irb@cutland.edu](mailto:irb@cutland.edu), or Patrick Boerner at [pboerner1@gmail.com](mailto:pboerner1@gmail.com)

I also understand that if needed, I may visit the counseling center here on campus to discuss my feelings and concerns about this research. The counseling center can be found at Van Hoesen Hall, Room B-44 and contacted by phone (607-753-4728).

I certify that I have read and understand this consent form and agree to participate in the research described. I agree that known risks to me have been explained to my satisfaction and I understand that no compensation is available from the State University of New York, The College at Cortland and its employees for any injury resulting from my participation in this research. I certify that I have been given a copy of this consent form to be taken with me.

## APPENDIX J



## MEMORANDUM

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To: Patrick Boerner  
Kate Polasek

From: Irena Vincent, Primary reviewer *on behalf of*  
Institutional Review Board

Date: 2/7/2013

RE: Institutional Review Board Approval

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In accordance with SUNY Cortland's procedures for human research participant protections, the protocol referenced below has been approved for a period of one year:

Title of the study: The Role of Appearance in Clients' Perceptions of Personal Trainers	
Level of review: Exempt	Protocol number: 121321
Project start date: Upon IRB approval	Approval expiration date*: Note: Exempt research

\* Note: exempt research does not require continuation requests; the SUNY Cortland IRB only requests annual email notification (to [irb@cortland.edu](mailto:irb@cortland.edu)) indicating that the research continues. The purpose of the continuation notification is to alert the IRB Administrator that the records of the original IRB approval must remain available. Unlimited continuations can be registered for exempt research under federal and SUNY Cortland IRB guidelines.

The federal Office for Research Protections (OHRP) emphasizes that investigators play a crucial role in protecting the rights and welfare of human subjects and are responsible for carrying out sound ethical research consistent with research plans approved by an IRB. Along with meeting the specific requirements of a particular research study, investigators are responsible for ongoing requirements in the conduct of approved research that include, in summary:

- obtaining and documenting informed consent from the participants and/or from a legally authorized representative prior to the individuals' participation in the research, unless these requirements have been waived by the IRB;
- obtaining prior approval from the IRB for any modifications of (or additions to) the previously approved research; this includes modifications to advertisements and other recruitment materials, changes to the informed consent or child assent, the study design and procedures, addition of research staff or student assistants, etc. (except those alterations necessary to eliminate apparent immediate hazards to subjects, which are then to be reported by email to [irb@cortland.edu](mailto:irb@cortland.edu) within three days);
- providing to the IRB prompt reports of any unanticipated problems involving risks to subjects or others;
- following the principles outlined in the Belmont Report, OHRP Policies and Procedures (Title 45, Part 46, Protection of Human Subjects), the SUNY Cortland College Handbook, and SUNY Cortland's IRB Policies and Procedures Manual;
- notifying the IRB of continued research under the approved protocol to keep the records active; and,
- maintaining records as required by the HHS regulations and NYS State law, for at least three years after completion of the study.

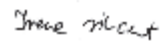


## APPENDIX J (Cont.)

Institutional Review Board  
Page 2

In the event that questions or concerns arise about research at SUNY Cortland, please contact the IRB by email [irb@cortland.edu](mailto:irb@cortland.edu) or by telephone at (607)753-2511. You may also contact a member of the IRB who possesses expertise in your discipline or methodology, visit <http://www.cortland.edu/irb/members.html> to obtain a current list of IRB members.

Sincerely,



Irena Vincent, Primary reviewer  
Institutional Review Board  
SUNY Cortland