The Influence of Athletic and Nonathletic Identities on Subclinical Eating and Somatoform Disorder Symptomology in Competitive Hispanic Male Athletes

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Abstract

The purpose of this research was to evaluate the relationship of athletic and nonathletic identities and subclinical eating and somatoform disorder symptomology in the competitive Hispanic male athlete population. The researcher administered a survey to eighteen male athletes that assessed athletic and nonathletic identities, and symptomology. Due to a limited sample size, the results are not statistically significant, and there is no evidence that symptomology was influenced more by an athletic or nonathletic identity. However, data do suggest food restrictive patterns in the population.

Introduction

Concern for college-aged athletic males exists among physical and mental health professionals who postulate that an increased desire for muscularity can lead to manifestation of weight control behaviors, which have deleterious effects on physical and mental health (Blow et al. 2010; Cafri et al. 2005; Pope, Phillips, and Olivardia 2000a; Ricciardelli et al. 2007; Thompson and Cafri 2007). Resulting from a perception of muscularity and strength as exclusive designations of masculinity, young males are vulnerable for developing body dissatisfaction evolving into a clinically diagnosable somatoform disorder referred to as muscle dysmorphia. Muscle dysmorphia is an excessive preoccupation with gaining muscle mass and decreasing body fat. Research has evaluated the incidence of body dysmorphia and the comorbidity for developing eating disorders, indicated by males with body dysmorphia who demonstrate an obsession with food, binge-purge behaviors, and the use of sports nutrition supplements (Pope et al. 2000b). There is a paucity of research on the body modification behaviors of undergraduate Hispanic males despite the rapid growth of this ethnic minority in college populations (National Center for Education Statistics 2007). Although ample evidence illustrates the occurrence of detrimental weight gain and weight loss behaviors among Hispanic youth, further studies should assess the prevalence of these behaviors among the undergraduate male population (Blow et al. 2010). Research on collegiate athletes, individuals who compete in NCAA Division 1 teams, proposes that subclinical muscle dysmorphia and eating disorder behaviors are disproportionately influenced by body dissatisfaction and are more frequently derived from concerns with athletic performance (Petrie et al. 2008; Raudenbush and Meyer 2003; Steinfeldt et al. 2011). Contrary to research on non-athletic undergraduate students who do not compete in NCAA Division 1, there is no significant influence of acculturation or ethnicity on the incidence of muscle dysmorphia among collegiate athletes (Galli et al. 2011). An investigation is necessary to examine the reason why these disparities do not exist in competitive male athlete populations. This investigation will examine the relationship of cultural and athletic identity with the pursuit of masculinity and the manifestation of muscle dysmorphia and eating disorder behaviors.

Investigations on the young and college-aged Hispanic population have reported a large incidence of eating disordered behaviors and body modification practices (Blow et al. 2010; Ricciardelli et al. 2007). College-aged Hispanic males exhibit decreased levels of body satisfaction from media exposure (Lorennzen, Grieve, and Thomas 2004; Nieri et al. 2005), and young Hispanic males have lower body satisfaction than young non-Hispanic Caucasian males (Neumark-Sztainer et al. 2002). Compared to young males of non-Hispanic Caucasian identity, young Hispanic males report higher frequencies of binge-purge behaviors, such as binge eating combined with self-induced vomiting, laxatives, or diuretics (Neumark-Sztainer and Hannan 2000; Story et al. 1995). Additional research supports that the perception of a small body size among young Hispanic males leads to low body satisfaction (Nieri et al. 2005). Among young Hispanic males with low body satisfaction, there is an increased propensity towards extreme weight loss and muscle gain behaviors (Croll et al. 2002; Neumark-Sztainer et al. 1999; Serdula et al. 1993). The majority of male collegiate athletes, regardless of ethnicity, perceive their actual body size as smaller than their ideal body size (Galli et al. 2011; Galli and Reel 2009), indicating the prevalence of a desire to increase muscle mass. The desire for a more muscular body size often correlates with enhancing performance in a sport (Galli et al. 2011). Increased muscularity may serve a functional purpose for collegiate athletes who are not obsessed with body image but concerned with developing adequate defenses while engaged in a violent sport such as football (Steinfeldt et al. 2011). However, in collegiate sports such as men’s swimming, where a small uniform leaves most of the body exposed, there is an increased prevalence of body modification behaviors such as excessive exercise which is not valuable for performance enhancement (Raudenbush and Meyer 2003). While more research must be done to clarify the relationship between masculinity and desired muscularity for athletes, there is significant evidence that male athletes who desire a more masculine physique are considered at risk...
for implementing rigorous exercise schedules, restrictive dietary patterns, and supplement use (Murray et al. 2012; Pope et al. 2000b). Most collegiate athletes, male or female, use some form of nutritional supplement, and yet many do not understand the efficacy or purpose of supplementation on their health or performance (Burns et al. 2004). Comprehensive nutrition education for athletes can result in developing more positive food choices and better athletic performance (Quatromoni 2008). While investigations of the relationships between negative body image and disordered eating have shown to have some correlation with nutrition supplementation (Raudenbush and Meyer 2003), these studies have ignored the performance goal oriented lifestyles collegiate athletes plan in collaboration with dietitians, athletic trainers, and physicians (Galli et al. 2011). Additionally, the influence of cultural differences (degree of acculturation or assimilation to team culture) on the manifestation of body dysmorphia and weight control behaviors in collegiate athletes have yet to be investigated (Ricciardelli et al. 2007).

There is an absence of literature that assesses the influence of cultural and athletic identities on young Hispanic males and their consumption of sports nutrition supplements. Young Hispanic males with body dissatisfaction are at a higher risk for substance abuse (Nieri et al. 2005; Rhodes et al. 2007) and may be more likely to use supplements to achieve weight modification, including increased masculinity (Pillitteri et al. 2008). However, literature on the perceptions and attitudes of the male Hispanic college population towards nutritional supplements and weight control is limited (Blow et al. 2010). Further examinations should include whether Hispanic males who identify themselves as athletes are motivated to use nutrition supplements by similar weight control or body size concerns as their peers who do not identify as athletes.

Literature Review

Somatoform/Eating Disorders in the Male Population

Young males in the college population are sensitive to gender identity and gender roles. They frequently misperceive their muscles as small or weak, therefore lacking masculinity (Grossbard, Neighbors, and Larimer 2011; Pope et al. 2000b). Ninety percent of participants in a survey of males attending college in the Midwest, Northeast, and Southwest areas of the United States reported some form of muscular dissatisfaction (Frederick et al. 2007). Body dissatisfaction among college males can escalate to detrimental weight control behaviors. One study reports that 25% of college males reported binge eating and restrictive dieting, and 30% supported “compulsive exercise”, as methods for gaining muscle and losing weight (Lavender, De Young, and Anderson 2010, 120). Pope et al. (2000b) performed multiple examinations of college-aged male body image in the United States and Europe. Subsequent to reviewing media images containing partially nude male models, college-aged men reported their ideal and perceived body size on a somatomorphic matrix. Men from Austria, France, and the United States were found to report an ideal body size with twenty eight pounds more muscle than the average male (Pope et al. 2000b). In a later study, men from the United States and Europe reported an ideal body size that was twenty pounds more muscular than the average male (Yang, Gray, and Pope Jr. 2005). These studies illustrate that in the United States and Europe, the social conditioning of males may lead to developing muscle dysmorphia (Nieri et al. 2005; Pope et al. 2000b; Pope, Phillips, and Olivardia 2000a; Yang, Gray, and Pope Jr. 2005). The abundance of media images portraying hypersexual behaviors, such as alcohol consumption (Nieri et al. 2005), sexual promiscuity, and strength have a major influence on the cognitive construct of masculinity in males (Pope, Phillips, and Olivardia 2000a). Selectivity for these masculine ideals are also observed in the evolution of toys for male children which have developed increasingly aggressive features, including unrealistically enlarged muscles and violent facial expressions (Pope, Phillips, and Olivardia 2000a).

Individuals with muscle dysmorphia, a subtype of a somatoform disorder, exhibit anxiety and obsessive behaviors manifesting from aspirations of increasing the size of their muscles (Pope et al. 2000a). Clinical diagnosis of a somatoform disorder involves analysis of psychological impairment, anxiety, or distress associated with body dissatisfaction, but many males exhibit subclinical symptomology such as one or more of these symptoms; however, not in sufficient quantity for an appropriate diagnosis (Cafri et al. 2008; Pope, Phillips, and Olivardia 2000a; Thompson and Cafri 2007). Pioneering researchers classified this behavioral disorder as reverse anorexia nervosa because males reported the same anxiety and body misperception as individuals diagnosed with anorexia nervosa, but with an opposite objective; patients with reverse anorexia nervosa wanted to gain weight (Pope, Phillips, and Olivardia 2000a). Research has also confirmed that restrictive dieting occurs with muscle dysmorphia in the form of binging and compulsive eating as well as an obsessive relationship with food (Andersen et al. 1995; Murray et al. 2012). While individuals with muscle dysmorphia may participate in excessive workout routines or use supplements to increase muscle size they also exhibit concerns with the adiposity of their bodies (Pope et al. 2000b; Pope, Phillips, and Olivardia 2000a; Raudenbush and Meyer 2003; Steinfeldt et al. 2011). Some males misperceive their bodies as too thin and unmuscular, while others are concerned with being overweight and unmuscular (Kelley, Neufeld, and Musher-Eizenman 2010; Murray et al. 2012). Individuals with muscle dysmorphia are more likely to engage in the use of anabolic steroids and ergogenic supplements (Hildebrandt, Alfano, and Langenbucher 2010; Pope et al. 2005). Additional concern exists in Western countries where suicide rates are higher among males who perceive their bodies as unmuscular, compared to males with somatoform disorders manifesting in concern for specific body regions such as
Cultural differences in perceptions of masculinity are a determinate of muscle dysmorphia. Despite the similar frequency of advertisements exposing the male body in both Asia and the United States, clinical diagnoses of somatoform disorders in Asia are not related to muscle dysmorphia (Kanayama and Pope 2011). This is particularly associated with the lack of conceptual affinity between masculinity and masculinity in Asian cultures (Kanayama and Pope 2011; Yang, Gray, and Pope Jr. 2005). In addition to masculinity, the rigid structure of the male gender role in the United States incorporates avoidance of psychological health services, due to the perception of mental health concerns as feminine qualities (Levant, Wimer, and Williams 2011). Eating and somatoform disorders are predominantly diagnosed among females (Hudson et al. 2007), which perpetuates the perception of these disorders as a disparity, primarily feminine, and irrelevant to men’s health. Due to the design of eating disorder and body dysmorphic evaluations for female populations, there are difficulties in assessing muscle dysmorphia symptomology among males (Bottamini and Ste-Marie 2006). Researchers acknowledge that male populations, which share or adopt Western values and identities, are at an increased risk of developing undiagnosed muscle dysmorphia (Ricciardelli et al. 2007).

Hispanic Collegiate Males
Machismo behaviors are a determinant of masculinity in the Hispanic culture (DeSantis 2012; Rhodes et al. 2007). Machismo behaviors are defined by high-risk hypersexual behaviors, dominance, substance abuse, and frequent unprotected sex with multiple partners (Rhodes et al. 2007). Hypersexual behaviors, a Western construct of masculinity, are frequently portrayed in alcohol advertisements, and influence the body satisfaction and behaviors of young Hispanic males (Nieri et al. 2005). Without knowing an individual’s degree of acculturation, it is impossible to determine their definition of masculinity or their willingness to engage in unhealthy weight modification practices (Blow et al. 2010; Nieri et al. 2005). A sample of young Hispanic males with low body satisfaction and greater degrees of acculturation reported fewer “antidrug” norms, indicating less reluctance toward using drugs or supplements to modify weight (Nieri et al. 2005). In contrast, a greater proportion of responses from less acculturated Hispanic males reported lower substance use than their more acculturated peers (Nieri et al. 2005). A viable argument is made by these studies: the more acculturated a Hispanic male becomes, the more likely he will engage in modification behaviors to achieve “machismo” or “masculine” traits, and experience some form of body or muscular dissatisfaction (Nieri et al. 2005; Warren, Castillo, and Gleave 2010).

Stephenson (2000) defines acculturation as a “complex, multidimensional process of learning that occurs when individuals or groups come into continuous contact with different societies” (71) and contributes to the development of body dissatisfaction among the Hispanic community (Warren, Castillo, and Gleave 2010). Investigations on body dissatisfaction and the desire to gain weight yield contrasting arguments for the influence of acculturation, since a higher degree of acculturation has also been associated with obesity among Hispanic youth (Bowie et al. 2007; Hubert, Snider, and Winkley 2005). These findings indicate that more acculturated Hispanic youth with poor body satisfaction desire thinner bodies regardless of their actual weight. An earlier examination revealed that Hispanics still participated in unhealthy weight modification techniques like restrictive dieting, despite significant reports of high weight satisfaction and body pride (Story et al. 1995). Since pride is a foundational element of the machismo identity, researchers expect resistance among males to report unadulterated concerns with body image on a questionnaire (Bottamini and Ste-Marie 2006). Despite the existence of studies on this population, research has not evaluated the objectives of Hispanic males as decreasing adiposity, increasing masculinity, or some combination of both (Kelley, Neufeld, and Musher-Eizenman 2010). Although there is body dissatisfaction among young Hispanic males that lead some to engage in weight control or weight gain behaviors (Croll et al. 2002; Neumark-Sztainer et al. 1999, 2002; Serdula 1993), there is little evidence that acculturation or cultural identity can explain the occurrence of nutrition supplement use on the preference for weight loss, weight gain, or both, in this population.

Research on young Hispanic males reveals an array of body modification behaviors including the use of binge-purge strategies and supplements. In a survey of Minnesota students from 61 public schools, 21.2% of the Hispanic male population reported increasing food and food supplements to gain muscle and weight (Neumark-Sztainer et al. 1999). In additional responses, Hispanic males (7.1%) reported using purging strategies (self-induced vomiting, laxatives, diuretics, and/or diet pills) as weight loss strategies and 27.9% of respondents reported consuming food supplements or increasing portion sizes to gain weight and muscle (Neumark-Sztainer et al. 1999). Additional research assessed a population of 152 Hispanic male students in Minnesota, 33.6% of respondents indicated low body satisfaction and reported using caloric substitutes (10.1%), skipping meals (18.8%), and decreasing portion size (22.8%) as weight modification mechanisms (Neumark-Sztainer et al. 2002). However, the 2002 study did not reveal any correlating data between degree of acculturation, body dissatisfaction, and weight control methods among that population. These findings are consistent with earlier studies, which reported skipping meals and dieting pills as popular choices for weight loss among young Hispanic males (Serdula et al. 1993). Although these students were neither self-reported athletes nor college students diagnosed with an eating disorder, there are trends of body dissatisfaction and supplement use developing at a young age for Hispanic male students.
Acceptance of drugs and dietary supplements as safe and efficable options for losing weight may be greater among young Hispanic males. Pillitteri et al. (2008) surveyed 3,500 US adults ages 25-34 on their use of dietary supplements to lose weight. Survey responses indicated that 19.8% of the male population used dietary supplements, and 41.6% of Hispanic adults were more likely to use dietary supplements (Pillitteri et al. 2008). Although this research evaluated the adult population, the data suggest a large acceptance of the efficacy of supplements among the Hispanic population—but it does not take into account the degree of acculturation of the sample. Furthermore, a study on the prevalence of substance abuse among young Hispanic males with body dissatisfaction revealed that acculturated young men who perceived their body size as too thin reported consuming larger amounts of alcohol (Nieri et al. 2005). Although males with muscle dysmorphia are more likely to use ergogenic substances to gain weight (Hildebrandt, Alfano, and Langenbucher 2010), Hispanic males regard substance use (alcohol, tobacco, and other drug use) as masculine, and is illustrated by the incidence of use among respondents (Rhodes et al. 2007). Acceptance of drugs and substances may influence the decision making process of young Hispanic males with intentions of modifying their weight. The significance of conventional gender roles in the Hispanic culture, combined with low risk avoidance, places this population at a high risk for using substances (Gonzalez-Guarda et al. 2010), which may determine the likelihood of using sports nutrition supplements.

In the United States, supplement use is common among collegiate athletes at high risk for developing body dysmorphia, muscle dysmorphia, and eating disorders (Galli et al. 2011; Pope, Phillips, and Olivardia 2000a). A survey of collegiate athletes found that 88.8% of respondents reported using a nutrition supplement (Burns et al. 2004). Among respondents in Burns et al. (2004), some of the more popular sports supplements used by athletes included creatine (31.4%), protein supplements (40.3%), and calorie-replacement drinks (47.0%). These results resonate with previous claims that creatine was used by 36% of freshman male football players (Rosenbloom, Jonnalagadda, and Skinner 2002) and 39% of male athletes (Jacobson, Sobonya, and Ransone 2001). Multiple studies suggest that the majority of collegiate athletes consume supplements regardless of their perceived adequacy or effectiveness, indicating that collegiate athletes lack access to quality nutrition supplement information (Jacobson, Sobonya, and Ransone 2001; Rosenbloom, Jonnalagadda, and Skinner 2002; Shattuck 2001). In general, athletes are uninformed about nutrition, indicated by studies in which 47% of male respondents believed that protein was the main energy source for muscle (Rosenbloom et al. 2002). This lack of knowledge may arise from the infrequency of an athlete’s consultation with doctors or dietitians for information on sports nutrition supplements. Instead, athletes often rely on athletic trainers or coaches who may not be as qualified to make recommendations on nutrition supplementation (Burns et al. 2004). Although there is a paucity of information detailing the perceived efficacy of supplements among the Hispanic population, supplement use and muscle dysmorphia are prevalent among both the Hispanic and athletic populations.

**Competitive Collegiate Male Athletes**

Diet modification and supplement use are popular performance enhancing methods among collegiate athletes (Petric et al. 2008; Raudenbush and Meyer 2003). A study by Raudenbush and Meyer (2003) found that one in four male athletes used supplements to increase muscle mass. They found that supplement users were fifteen pounds heavier and spent more time weight lifting than teammates who did not report using supplements. Like their teammates, these athletes identified their ideal body size as larger, but correctly estimated their actual body sizes as larger than their teammates (Raudenbush and Meyer 2003). Additional research affirms that although collegiate athletes report higher levels of body satisfaction than nonathletes, this population still participates in more muscle gain and weight loss behaviors than their nonathletic peers (de Bruin, Oudejans, and Bakker 2007; Galli et al. 2011; Ziegler et al. 1998). Since body image concerns emerge from career or sport oriented goals, and not poor body image, there are claims that there is a lower incidence of developing clinical eating and somatoform disorder symptomology (Galli et al. 2011). Comparable to their Hispanic peers, collegiate athletes are also a high-risk population for body dysmorphia symptomology and substance use (Diehl et al. 2012; Quatramoni 2008).

Among collegiate male athletes, masculinity is not an exclusive definition of masculinity (Galli et al. 2011; Raudenbush and Meyer 2003; Steinfeldt et al. 2011). Investigations among collegiate male athletes report that masculinity is associated with being an athlete, but the drive for masculinity, and subsequent supplement use, serves a functional purpose to enhance performance (Steinfeldt et al. 2011). Collegiate male athletes report ideal body sizes that are twenty pounds more muscular than their own, and that sport related pressures are a priority over sexual attractiveness or developing a more “healthy” body (Steinfeldt et al. 2011). This corresponds with research found in a study of 203 collegiate male athletes (mean age=20.29) where the motivation to gain muscle mass was derived from weight pressures perpetuated by coaches and teammates, rather than self-reported concerns with body appearance (Galli et al. 2011). In one particular study, researchers claimed that male swimmers reported the highest amount of weekly hours spent doing workouts and aerobic exercise than athletes in other sports (Raudenbush and Meyer 2003). Raudenbush and Meyer (2003) concluded that social pressures, such as the uniforms the swimmers wore, which exposed more of their bodies, influenced their desire to modify their bodies. In addition, the study by Steinfeldt et al. (2011) indicated that males who strongly identified
as athletes reported longer and more intense workout routines for conditioning (Steinfeldt et al. 2011). Galli et al. (2011), Raudenbush and Meyer (2003), and Steinfeldt et al. (2011) report that there is no significant relationship between ethnicity and somatoform disorder symptomology. Although body dissatisfaction is seldom reported, there is compelling evidence that collegiate athletes are preoccupied with working out and gaining muscle (Galli et al. 2011).

Additional investigations are necessary to determine why there is less incidence of body dissatisfaction among male collegiate athletes despite an apparent preoccupation with body modification in the population. Evaluating the significance of athletic and masculine identities may provide evidence for the development of eating and somatoform disorder psychopathology among male athletes. Analogous investigations are pertinent for the male Hispanic population, for whom strength and masculinity, substance use, and low risk avoidance are determinants of masculinity and place this group at a higher risk for participating in health damaging behaviors and developing muscle dysmorphia (Gonzales-Guarda et al. 2010; Nieri et al. 2005; Rhodes et al. 2007).

The hypothesis is that Hispanic athletes who consider their identity as an athlete to be more important than their cultural identity will exhibit fewer positive responses (in agreement more often) than their Hispanic athletic peers who do not consider athleticism their preeminent identity. Hispanic athletes who do not identify as “athletes” will have more positive responses indicating a greater prevalence of subclinical muscle dysmorphia or disordered eating symptomology.

**Methods**

**Participants**

A survey was distributed to 119 male participants who competed in NCAA Division 1 or varsity athletics at California State University, Sacramento. Among the participating teams were rowing (n=21), baseball (n=31), football (n=30), tennis (n=8), basketball (n=12) and soccer (n=17). Eighteen responses indicated some form of Hispanic identity (Mexican, Spanish, Latino, or Hispanic). The surveys of students who did not report a Hispanic identity were excluded from analysis of the results.

**Instruments**

The author, with valuable input from Maureen Smith, Ph.D. and Kathleen Deegan, Ph.D., developed a survey. The survey was generated based on instruments used in seminal studies with high validity (Galli et al. 2011; Pope et al. 2000b). The survey was distributed to participants based on the availability of coaches. The author personally administered a paper format of the survey to teams with pencils during a ten to fifteen minute time period of a team meeting for each individual sport.

**Ethnicity and Cultural Identity**

The objective of this research was to determine the cultural identity, body/muscle satisfaction, and eating disorder pathology among athletic Hispanic males. A survey was designed to examine the influence of identity on the frequency of disordered eating and somatoform behaviors. Athletes reported their ethnic identity in a blank space, to discourage students from being limited to selections like “Hispanic” or “Caucasian” as ethnicities allowing students to include whatever ethnicity they considered most influential to their identity. Responses such as “Mexican”, “Latino”, “Hispanic” and “South American” were identified as “Hispanic” identities. Additionally, students were asked if their ethnic identity was more significant than their cultural identity. An additional question existed in the survey to corroborate, or impugn, the validity of the response in conjunction with the influence of athletic identity; using a Likert scale, the respondent recorded their level of agreement with the statement: “My identity as an athlete is more important than my cultural identity.”

**Subclinical Somatoform Disorder Symptomology**

To assess subclinical somatoform disorder symptomology, the survey extracted responses that described the attitudes of athletes toward exercise, food, and body image. In order to address body satisfaction, respondents assessed their own body type in three ways. First, respondents assessed their own body type by selecting one of the following responses: “Underweight, more muscle and less fat”, “Underweight, less muscle and more fat”, “Average weight, more muscle and less fat”, “Average Weight, less muscle and more fat”, “Overweight, more muscle and less fat”, “Overweight, less muscle and more fat.” Subsequently, respondents compared their body type to the body type of an ideal athlete by selecting one of the following options: “More muscle and more fat”, “More muscle and less fat”, “Less muscle and more fat”, and “Less muscle and less fat”. Lastly, respondents compared their body type to the ideal sexually attractive body type by selecting one of the four responses from the previous question. These questions are similar to the somatomorphic matrix used by Pope et al. (2000b), but the responses were modified to limit the selection of choices available to the respondent. Pope et al. (2000b) used the somatomorphic matrix to quantify such responses as “Average weight, more muscle and less fat” by using illustrations which varied in adipose and muscle composition. The somatomorphic matrix used by Pope et al. (2000b) reveals very specific details about body type preferences while the purposes of the current survey are concerned with general body satisfaction and not necessarily...
the desired amount (by mass and weight) of adipose or muscle tissue an athlete
wishes to increase or decrease.

Additional questions used a Likert scale format to assess whether athletes felt that
their muscularity was significant to their teammates or coaches, and whether peer
pressure affected the respondents desire to increase muscularity. Another Likert
scale question addressed whether athletes agreed that working out had interfered
with their social or academic responsibilities. Similar questions were used by

Subclinical Eating Disorder Symptomology

To evaluate subclinical eating disorder symptomology, numerous Likert scale
questions were used that had similarity to assessments of an eating disorder, as defined
by the Diagnostic Statistical Manual-IV, and were also used in the assessment of eating
disorders by Croll et al. (2002) as well as Lavender, De Young, and Anderson (2010).
Some of these questions such as: “I avoid eating foods which are low in protein”
and “Eating foods which contain fat contribute to an undesirable body,” implicitly
addressed the eating behaviors of athletes or their propensity for adopting stringent
or polarized eating patterns. Another Likert scale question assessed whether athletes
believed that protein supplements were a dynamic source of protein.

Analysis

The purpose of the survey was to assess the correlation between cultural or
athletic identity and the frequency of responses, which indicated subclinical
eating or somatotorm disorder symptomology. Frequency of responses indicating
subclinical symptomology was the dependent variable, with the influence of
Hispanic or athletic identity as the independent variable. Responses from Likert
scales were combined, such that “Agreed” and “Strongly Agreed” are reported as
“Agreed”. Additionally, the responses “Disagreed” and “Strongly Disagreed” are
reported as “Disagreed”.

Results

Of the 119 responses from athletics, eighteen responses were from Hispanic
males. Of the eighteen Hispanic athlete responses, twelve respondents were AA
(athletic athletes; athletes who indicated that “athlete” was a more significant
identity), three identified as students, one identified with their ethnic group,
and two indicated some other form of identity (family member, friend, etc.).
For the purposes of this study, which examines the differences between athletic
and nonathletic identities, the responses of non-athletic identifying athletes are
combined to form a group of six athletes with nonathletic identities.

Table 1
Responses to Body Type Question

<table>
<thead>
<tr>
<th>Perception of Body Type</th>
<th>Athletic Identity (n=12)</th>
<th>Non Athletic Identity (n=6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight (more muscle, less fat)</td>
<td>20.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Underweight (less muscle, more fat)</td>
<td>0.0%</td>
<td>25.0%</td>
</tr>
<tr>
<td>Average Weight (more muscle, less fat)</td>
<td>60.0%</td>
<td>50.0%</td>
</tr>
<tr>
<td>Average Weight (less muscle, more fat)</td>
<td>0.0%</td>
<td>25.0%</td>
</tr>
<tr>
<td>Overweight (more muscle, less fat)</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Overweight (less muscle, more fat)</td>
<td>20.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Table 1 reports the responses of athletes identifying as athletes, and athletes
who did not identify as athletes, to the options used to describe their perception
of their body type. Of the AA (athletic identifying athletes) respondents, 20% indicated
that they were overweight with more fat than muscle, 20% indicated
that they were underweight with more muscle than fat, and 60% indicated that
they were average weight with more muscle than fat. Among the NA (non-
athletic identifying athletes) respondents, 25% indicated that they were average
weight with more fat than muscle, 50% indicated that they were average weight
with more muscle than fat, and 25% indicated that they were underweight with
more fat than muscle.

Table 2
Responses to Survey Questions

<table>
<thead>
<tr>
<th>Question/Statement</th>
<th>Athletic Identity (n=12) Agreement with Statement</th>
<th>Non Athletic Identity (n=6) Agreement with Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideal Athletic Body Type Contains More Muscle and Less Fat than Respondent</td>
<td>75%</td>
<td>66.6%</td>
</tr>
<tr>
<td>Sexually Attractive Body Type Contains More Muscle and Less Fat than Respondent</td>
<td>91.6%</td>
<td>83.3%</td>
</tr>
<tr>
<td>Coaches encourage respondent to gain muscle mass</td>
<td>70%</td>
<td>50.0%</td>
</tr>
<tr>
<td>Protein supplements are effective at increasing muscle mass</td>
<td>33.3%</td>
<td>50.0%</td>
</tr>
<tr>
<td>Respondent avoids low protein foods</td>
<td>33.3%</td>
<td>66.6%</td>
</tr>
<tr>
<td>Foods with fat contribute to an undesirable body type</td>
<td>41.6%</td>
<td>66.6%</td>
</tr>
</tbody>
</table>

Table 2 reports the responses to survey questions among AA athletes and NA
athletes. 91.6% of the AA respondents indicated that the more sexually attractive
body type had more muscle and less fat, while 75% indicated that the ideal body
type for their sport had more muscle and less fat. Of the AA respondents, 70% indicated that coaches and teammates encouraged them to gain muscle mass, but only 33.3% agreed that protein supplements like Muscle Milk or amino acids were viable options for obtaining protein. In addition, 33.3% of AA respondents agreed that they avoided foods that were low in protein, and 41.6% of AA respondents agreed that foods with fat contribute to an undesirable body type. Among NA respondents, 83.3% indicated that the more sexually attractive body type had more muscle and less fat than their own, and 66.6% of respondents indicated that the ideal body type for their sport had more muscle and less fat than their own. In addition, 50% of the NA respondents agreed that coaches and teammates encouraged them to gain muscle mass, and 50% also agreed that protein supplements were a viable option for obtaining protein. Among the NA respondents, 66.6% agreed that they avoided foods that were low in protein, and 66.6% of respondents agreed that consuming foods with fat contributed to an undesirable body type.

Discussion

Although the sample sizes were not large enough to generate any statistically significant conclusions, support for the original hypotheses is present in the responses of these collegiate Hispanic athletes. The original hypothesis claimed that collegiate Hispanic males who participate in competitive athletics would exhibit less disordered eating or negative body image responses if they identified as athletes, rather than with another identity such as culture or student. AA responses indicated a higher frequency of negative body image, including beliefs that musculature would improve athletic performance as well as sexual attractiveness. There is a low prevalence of disordered eating behaviors from AA survey responses. Compared to the non-athletic responses (NA), fewer AA athletes believed that protein supplementation, or avoiding foods that are low in protein, were efficacious methods for gaining muscle mass. This reveals that although athletes are interested in increasing muscle mass, they may not be using protein supplements. Since anabolic steroid use is not addressed in the survey, it is speculative as to whether athletes obtain adequate protein through methods that are more deleterious. There is evidence of a lack of nutrition education in the Hispanic athletic population, as both AA and NA believed that fat in foods contributed to an undesirable body type. Considering that 33.3% of the AA athletes and 50% of the NA athletes agreed that protein supplements were a viable option for building muscle, product promotion might influence the nutrition education of these athletes. Although the respondents were athletes at Sacramento State, where Muscle Milk sponsors athletic events, this may be representative of athletes at other campuses with active protein supplement marketing.

There are limitations to drawing conclusions from the data collected from this survey due to the methodology of data collection. For example, the survey used questions that are modified from multiple sources, but did not utilize a specific questionnaire with commensurate statistically verified validity as the questionnaires used in Galli et al. 2011; Pope et al. 2000b; and Raudenbush and Meyer 2003. More readily used instruments that quantify symptomology of eating and somatoform disorder symptomology require lengthy administration times for respondents to complete, but would be more accurate in determining symptomology. Thus, the results of this survey may not be sufficient means to declare an incidence of eating or somatoform disorder symptomology in the population surveyed. Additionally, the responses to questions regarding nutrition may not be a valid measure of an eating disorder since athletes may not have adequate nutrition education-- rather than an individual with an eating disorder who might have advanced education in nutrition, and thus manipulates their diet to take advantage of certain nutrients.

There are an array of modifications, which could improve the validity of this study. One major improvement would be the generation of sufficient data; the dilemma in this experiment are attributed to the dearth of Hispanic athletes on the campus. Additionally, the assessment of the influence of cultural identity requires a unique experimental method besides a survey addressing respondent’s personal feelings. Identity itself was an ambiguous term in the survey, and an athlete who identifies with their ethnic or cultural identity may still identify as an athlete. Elucidating the origins of masculinity are further complicated since the influence of all of these identities amalgamate in the personalities, beliefs, and consumer choices of the athletes. Additionally, more valid methods of testing for eating and somatoform disorders could improve the response to the hypothesis concerning the prevalence of symptomology. The data are further complicated by confounding variables such as the specific sport of the athlete. Athletes engaged in tennis or rowing may be more concerned with decreasing adiposity than athletes in baseball or football who are more concerned with increasing musculature.
References


