



A comparative analysis of body image and body composition in female collegiate athletes and non-athletes



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Abstract

Purpose: Body image dissatisfaction has been linked to eating disorders and low self-esteem. The design aims to examine the variables in order to educate women and raise awareness about healthy body image. Due to different pressures that are relevant in athletes, dissatisfaction should be studied to conclude if sports add to a greater source of body comparison and discontent.

Design: 42 females were divided into 2 groups and given the "Body Image Survey Non-Athletes" or the "Body Image Survey Athletes" survey containing questions on predicted body fat percentage and body image. Lange Calipers (Beta Technology, USA) were used to determine body composition using the Jackson-Pollock site of 7 technique.

Results: A Wilcoxon signed ranked test was run to compare perceived and measured body fat. P values were set at $p < 0.05$. Significance was found for the perceived norm of weight management goals for women at their university ($P = .038$) and for estimation on how participants' body fat percentage compares to collegiate athletes ($P = .001$). Average total body fat composition for athletes was $20.57\% \pm 3.44$ and non-athletes $22.45\% \pm 3.17$. The comparison of actual versus perceived body composition was significant, for non-athletes ($P = .008$) and for athletes ($P = .004$).

Conclusion: Non-athletes desired to lose more weight than athletes although both groups overestimate their body fat composition. They believed to have higher body fat than average collegiate athletes in comparison to athletes who perceived themselves as having similar body composition to average collegiate athletes. Implications from results show that college females have inaccurate body image perceptions and thus the increase of healthy body image curriculum should be implemented into both education and athletics. Since more evidence was shown for body image issues in non-athletes, it is imperative to reduce false body perceptions in the general population outside of the athletic atmosphere.

Introduction

There has been considerable interest in the topic of body image perception, body weight distortion and weight dissatisfaction in the last quarter century. Body Image is defined as a multifaceted construct that consists of a person's perceptions of and attitudes towards his or her body and appearance (2). Body image dissatisfaction has been linked depression and eating disorders as well as affects self-esteem, interactions/relationships with others, and overall confidence (3). As media and the surrounding world continue to have prominent influence on visual perception, the trend of eating disorders continues to rise. A prominent factor is the extent to which women internalize the thin beauty reinforced and portrayed by Western societies. An important population for investigation in self-perception of body weight is teen and early adult females as they are the most likely candidates for developing eating disorders (1). Body image perception is a powerful public health concern as it can have a highly negative impact on quality of life. By investigating a population in a critical self-developing age, the design is to pinpoint patterns and prevalence in order to educate college women about healthy body image and raise awareness to their influential community including: coaches, trainers, teammates, professors, etc.. This research aims to analyze how self-perception of body weight may differ among two groups of college women: athletes and non-athletes. Through a survey the predicted body fat percentage and body satisfaction will be correlated with actual body composition results.

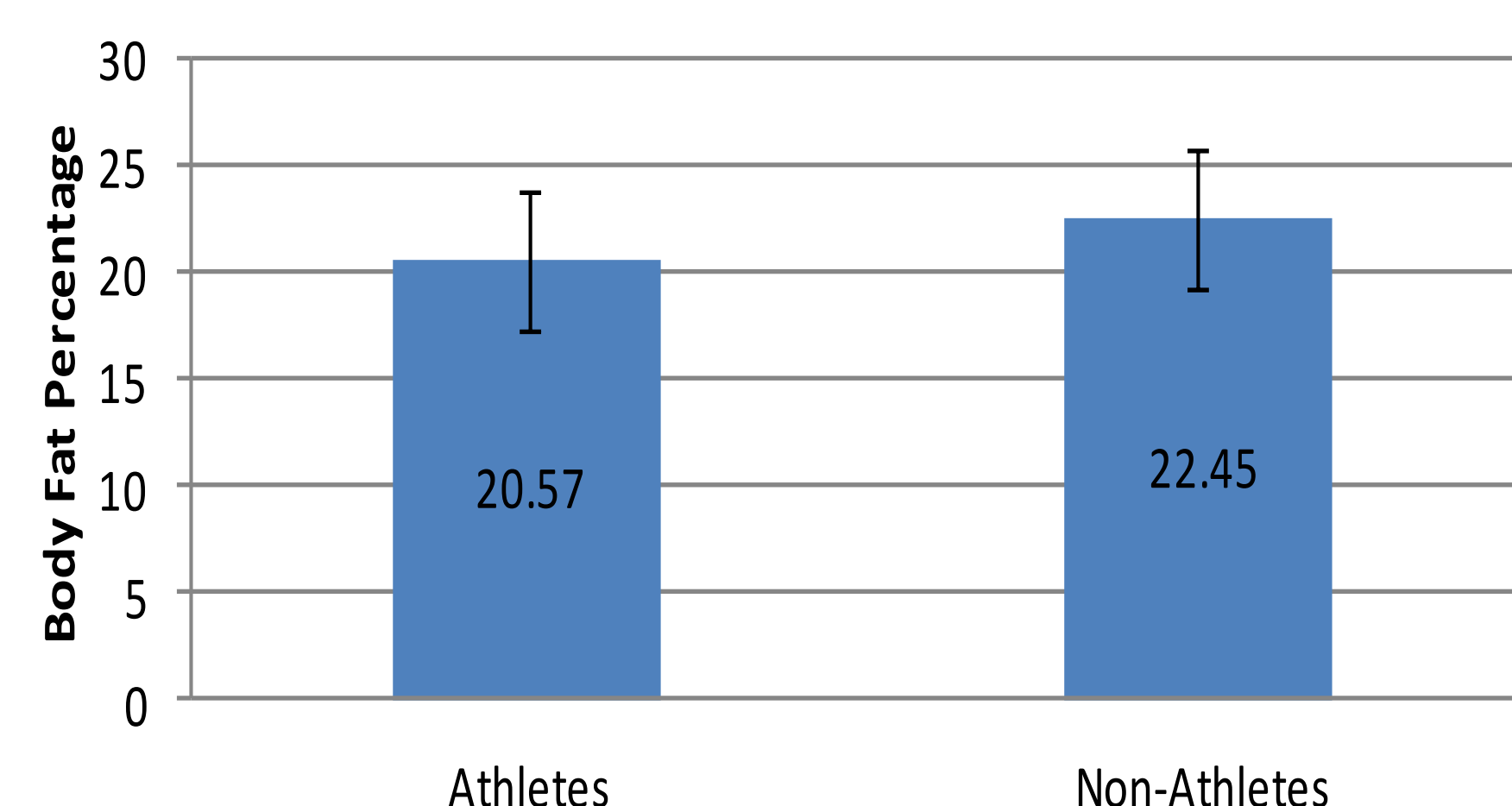
Results

A Wilcoxon signed ranked test was run to compare perceived and measured body fat. P values were set at $p < 0.05$. Significance was found for the perceived norm of weight management goals for women at their university ($P = .038$) and for estimation on how participants' body fat percentage compares to collegiate athletes ($P = .001$). Average total body fat composition for athletes was $20.57\% \pm 3.44$ and non-athletes $22.45\% \pm 3.17$ (Table 1). The comparison of actual versus perceived body composition was significant, for non-athletes

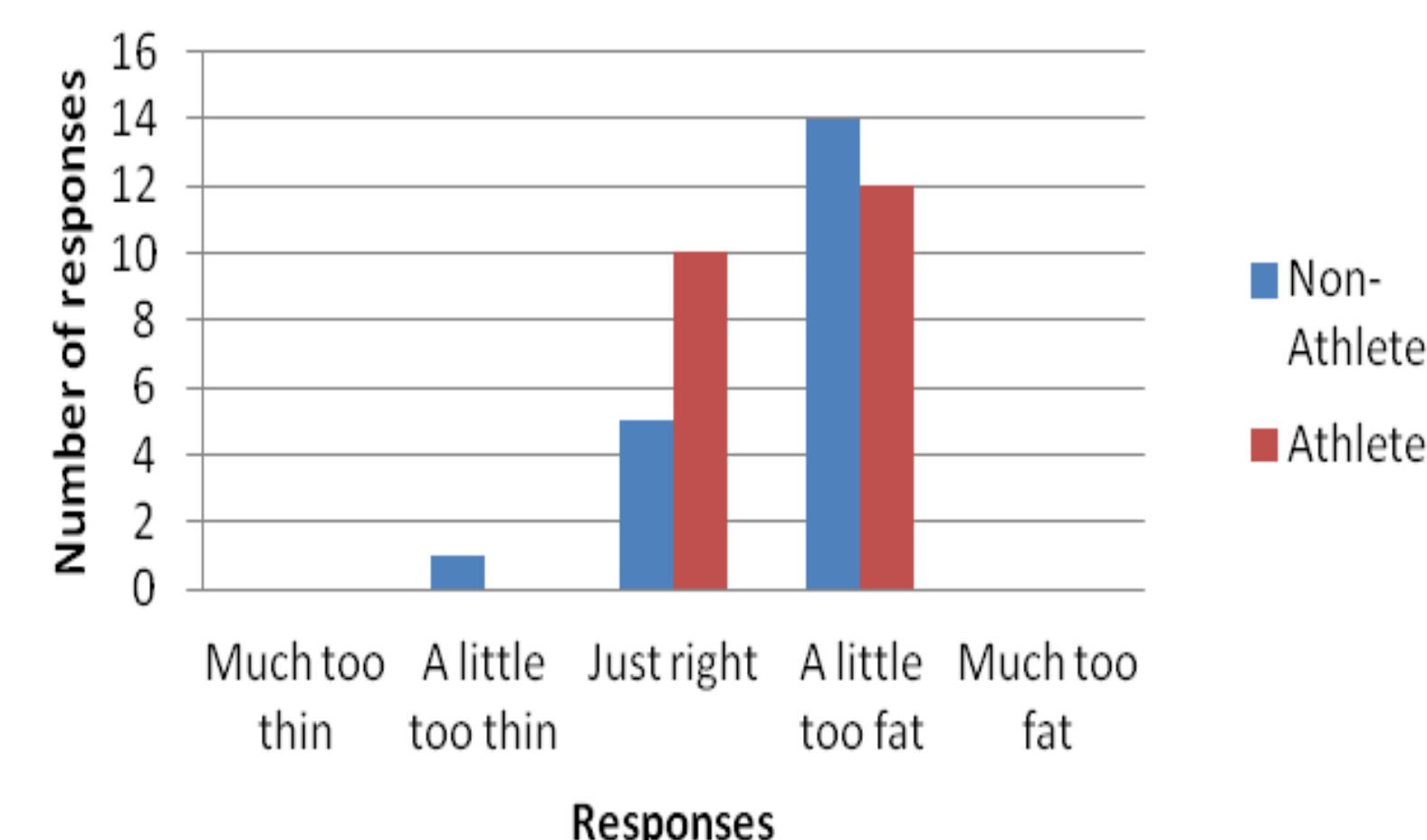
Conclusion

The data revealed that more non-athletes aimed to lose weight than athletes. In addition, for those who chose their current weight management goal as "weight loss", non-athletes desired to lose more weight than athletes. Also, more non-athletes perceived themselves as being 'a little too fat' (Table 2). Both groups identified media and social environment as mediums they feel the most pressure from in order to match a certain body type. (An important note, only one subject of the athlete category identified their coach or teammates as a medium= they feel pressure from to match a certain body type). Furthermore, both groups consistently overestimated their body fat composition, however, athletes had a greater over estimation of their own body fat composition by a higher percentage than non-athletes. Also, non-athletes believed to have higher body fat than average collegiate athletes in comparison to athletes who perceived themselves as having similar body composition to average collegiate athletes. Implications from results show that college females have inaccurate body image perceptions. A likely cause is due to their inaccurate estimate of a healthy body fat composition range. Thus the increase of healthy body image curriculum should be implemented into both academic and athletic settings. The survey results would recommend for such curriculum or awareness to include inaccurate sources of influence, healthy body fat composition range, and appropriate weight management techniques. Since more evidence was shown for body image issues in non-athletes, it is imperative to reduce false body perceptions in the general population outside of the athletic atmosphere.

Graph 1: Average Body Fat Percentage



Graph 2: Self Perception of Body Weight



Methods

Of the subjects tested ($n=42$), 22 were female division three collegiate athletes and 20 were female non-athlete college students within the ages of 19-22 years old. Each subject was given a survey titled, "Body Image Survey Non-athlete" or "Body Image Survey Athlete" which pertained to their current participation in college sports. After filling out the survey, both test administrators performed a 7-site skin-fold test to measure the percentage of adipose tissue of the subjects total body composition. Measurements from the test administrators were only be considered usable if the results range within 2% of each other. The percentage body fat from both testers was averaged to reduce tester error. Once all subjects had completed both parts of the experimentation testing, the collected data was analyzed along with norms and answers for other participants.

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