Eating and Exercise Behaviors and Motivational Differences Between Kinesiology Majors and Non-Majors

Elizabeth L. Haddock and Stacey A. Gaines Ph.D.

Human Performance Laboratory, Department of Health & Kinesiology

Texas A&M University – Kingsville, Kingsville, TX

INTRODUCTION

Exercise and eating behaviors have garnered a substantial amount of research attention. Several health risks are known to be lower in individuals who exercise, yet only 35% of college students exercise on a regular basis (Silliman, Rodas-Fortier & Neyman, 2004). Despite the evidence suggesting healthy eating and exercise habits to reduce chronic disease, college students typically do not meet their own stated goals for exercise and nutrition, or goals set forth by national guidelines (Walace et al., 2000). Therefore, a college campus is a challenging yet necessary setting for people to overcome barriers and obstacles in their lives that may hinder their exercise or eating behaviors. Additionally, eating and exercise behaviors, as well as individuals' motivation for these behaviors, are factors that play a role in differences in body composition (Deci & Ryan, 1990, 2008). Exercise and eating behaviors not only affect physical aspects, but also emotional and mental thinking. Individuals who exercise on a regular basis report having a greater purpose in life, higher self-esteem, greater personal growth, and tend to create a more positive atmosphere as compared to those who do not exercise (Edwards, Ngcobo, Edwards & Palavar, 2005). These positive outcomes from exercise can play a role in a person's motivation to workout. The motivation to eat healthy and participate in regular exercise can stem from many different aspects. Some people are intrinsically motivated and strive to meet challenges and goals set by and for themselves; others are motivated to live healthy lifestyles and participate in exercise due to outside factors such as social pressures and acceptance of others (Deci & Ryan, 1990). Kinesiology is a major that is primarily health and fitness based where healthy nutrition and exercise habits are generally valued by students. As such, it seems that kinesiology majors should be more motivated to exercise and eat a balanced diet when compared to non-kinesiology majors.

PURPOSE & HYPOTHESES

The purpose of this study was to examine motivational components for eating and exercise behaviors, as well as the individual differences in these behaviors between kinesiology majors and non-kinesiology majors. Several hypotheses are forwarded.

1. First, it is expected that kinesiology majors will show greater healthy eating and exercise behaviors, as well as have more self-determined motivation for these components than non-kinesiology majors.
2. Second, it is hypothesized that there will be differences in body composition with kinesiology majors having lower compositions than non-majors.
3. Finally, we hypothesize there to be differences within kinesiology majors with regards to study variables, where exercise science majors will show the most healthy eating and exercise behaviors, the most self-determined motivation, and the lowest body composition than physical education or recreation majors. We hypothesize recreation majors to show the least healthy eating and exercise behaviors, the least self-determined motivation, and the highest body composition across the kinesiology majors.

METHOD

Participants:

Kinesiology majors and non-majors on a college campus (N=330; 58% kinesiology majors) voluntarily completed a self-report questionnaire. Participants ranged in age from 17-25 years (M=21.15, SD=1.32). Most of the participants described themselves as Hispanic (n=214; 64.8%), Caucasian (n=70; 21.2%), or African American (n=39; 11.8%). The participants were generally spread across the grade levels represented on a college campus (i.e., 28.5% freshman, 16.7% sophomore, 24.8% junior, 28.8% senior, and 1.2% graduate). Within the kinesiology major (n=191), students reported degree tracks of Exercise Science (63.9% of majors), Physical Education (18.8% of majors), and Sport Business/Leisure (17.3% of majors). Participants BMI ranged from underweight (2.1%), thin (.6%), normal (42.4%), overweight (30.6%), and obese (24.2%).

Procedures and Measures:

After obtaining appropriate informed consent documents, a multi-section questionnaire was administered during a regularly scheduled class session. The questionnaire contained demographic items, and the following previously validated and reliable measures:

Exercise Behavior: Physical Activity Questionnaire for Adolescents (Kowalski, Crocker, & Donan, 2004); 7 items; "*In the last 7 days, on how many evenings were you very active?*"; (1) none to (5) 5 or more times; α=.69

METHOD, cont.

Eating Behavior: Kristal Food Habits Questionnaire, Block Fat Screener, and Block Fiber Screener (Goldberg, 1999, 2000); 48 items (20 diet, 17 fat, 11 fiber); *In the past month, how often did you..."only eat fruit for dessert* " (diet), "*eat french fries*" (fat), "*eat green salad*" (fiber); (1) never to (5) 17+ times; α=.84 (diet), α=.83 (fat), α=.82 (fiber)

Exercise & Eating Motivation (adapted for each): Behavioral Regulation in Exercise Questionnaire-2 (Markland & Tobin, 2004); 38 items (19 exercise, 19 eating); "*I value the benefits of exercise*" (exercise), "*I feel guilty when I don't eat healthy*" (eating); (1) not true for me to (5) very true for me; α=. 82 (exercise), α=.85 (eating)

Body Mass Index: Calculated using self-reported height and weight (Quetelet, 1869)

$$\text{WEIGHT (kg)} / [\text{HEIGHT (m)}]^2$$

RESULTS

Differences Between Majors and Non-Majors:

ANOVA was utilized to compare kinesiology majors and non-majors on the study variables (eating behavior, exercise behavior, eating motivation, exercise motivation, and body mass index). Kinesiology majors reported healthier exercise behaviors and greater motivation to exercise than non-majors (p < .001), however no differences were found between the groups with regard to eating behaviors or eating motivation. Additionally, there were no significant differences found between the groups on BMI (see Figure 1).

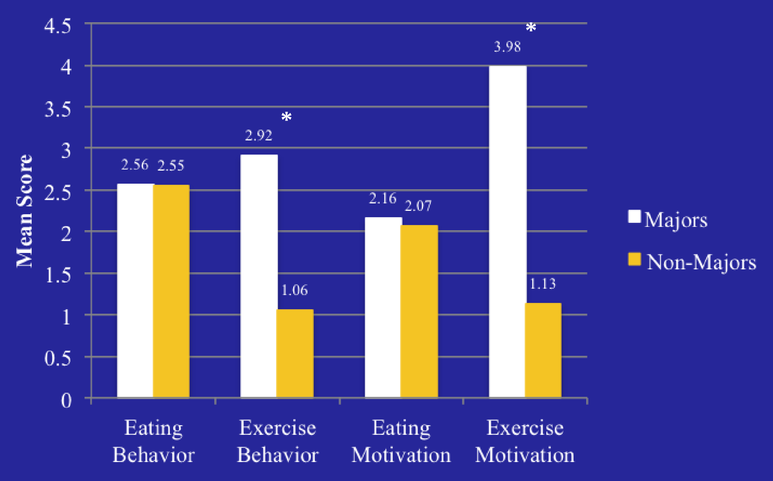

Figure 1: Majors vs. Non-Majors Main Effect.
Majors and non-majors differed significantly (*p<.001) with regard to exercise behavior and exercise motivation.

Differences Among Majors:

Differences among kinesiology majors in differing degree tracks (i.e., exercise science, physical education, and sport business/leisure) on the study variables was examined using ANOVA. There were no differences found with regard to eating behaviors, exercise behaviors, eating motivation, or exercise motivation. There was a significant difference between the degree tracks with regard to BMI (p < .01) where exercise science majors had healthier BMIs than physical education or sport business/leisure majors (See Figure 2a and 2b).

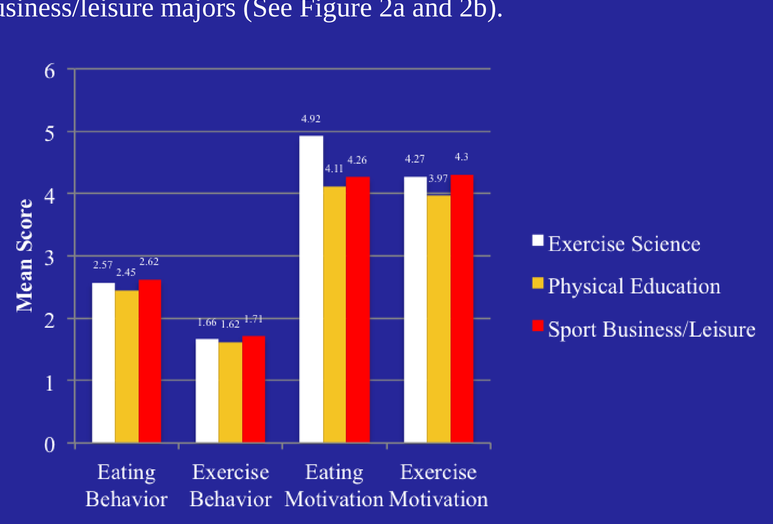

Figure 2a: Exercise Science vs. Physical Education vs. Sport Business/Leisure Differences in Eating and Exercise Behaviors.
There were no differences between the degree tracks with regard to the eating and exercise variables.

Presented at the 2013 Annual Meeting of the Texas Chapter of the American College of Sports Medicine Austin, TX

RESULTS, cont.

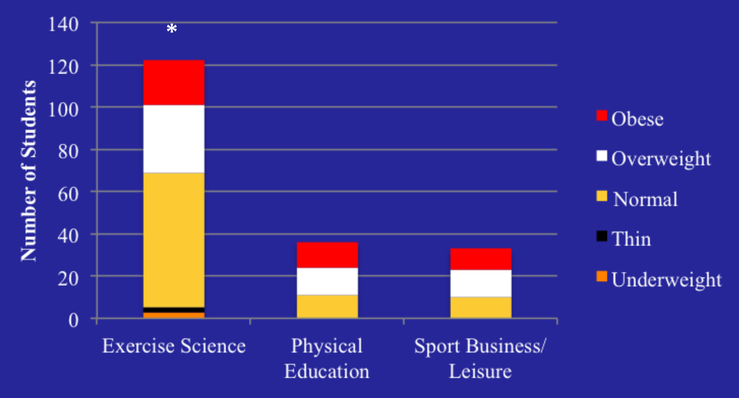

Figure 2b: Exercise Science vs. Physical Education vs. Sport Business/Leisure Differences in BMI.
Exercise Science majors differed significantly from physical education and sport business/leisure majors (*p<.01) with regard to BMI.

CONCLUSIONS

Our results suggest that kinesiology majors may hold, and be more motivated toward, better exercise habits than non-majors.

- Exercise behaviors are more consistently emphasized within the curriculum of kinesiology majors. Thus they should have a more fundamental knowledge of exercise and its benefits (Kilpatrick, Hebert, & Bartharlomew, 2005).

However, there were no differences between kinesiology majors and non-majors with regard to eating behavior and motivation, or BMI classification.

- Culture, including foods consumed, meal size, and frequency, may be partially responsible for this finding. Sixty-five percent of participants in the study reported Hispanic ethnicity, and Hispanics tend to show higher BMI than non-Hispanic populations (Winkleby, Gardner, & Taylor, 1996).
- Additionally, a large percentage of the kinesiology sample were also college athletes. Thus, a major limitation of the study involves not accounting for differences in BMI classifications between athletes and non-athletes (Ode, Pivarnik, Reeves, & Knous, 2007; Speakman et al., 2005).

A significant difference emerged among the degree tracks within kinesiology with regard to BMI.

- Fifty-six percent of the participants who were on the exercise science degree track also reported being college athletes. While these participants reported similar eating and exercise behaviors and motivation as the physical education and sport business/leisure participants, their athletic participation suggests an increased focus on fitness and may be partially responsible for these results (Scott-Sheldon, Carey, & Carey, 2008).

Education on how to make exercise and eating healthy fun and enjoyable, rather than just necessary and required for health, could increase motivation and ultimately behavioral outcomes for both components.

REFERENCES

Deci, E. L., & Ryan, R. M. (1990). A motivational approach to self: Integration in personality. In R. D. Dienstbier (Ed.), Nebraska symposium on motivation: Vol. 38, Perspectives on motivation (pp. 237-288). Lincoln: University of Nebraska Press.

Deci, E. L. (2008). Self-determination theory: A macrotheory of human motivation, development and health. *Canadian Psychology*, *49*, 182-185.

Edwards, S., Ngcobo, H., Edwards, D., Palavar, K. (2005). Exploring the relationship between physical activity, psychological well being, and physical self perception in different exercise groups. . *South African Journal for Research in Sport, Physical Education and Recreation*, 27, 75-90.

Kilpatrick, M., Hebert, E., Bartholomew, J. (2005). College students' motivation for physical activity: Differentiating men's and women's motives for sport participation and exercise. *Journal of American College Health*, *54*, 87-94.

Ode, J., Pivarnik, J., Reeves, M., Knous, J. (2007). Body mass index as a predictor of percent fat in college athletes and nonathletes. *Medicine and Science in Sports and Exercise*, *39*, 403-409.

Quetelet, A. (1869). Physique Sociale ou Essay Sur le Development des Faculties de L'homme. Bruxelles: C. Muquardt.

Scott-Sheldon, L., Carey, K., Carey, M. (2008). Health behavior and college students: Does Greek affiliation matter?. *Journal of Behavioral Medicine*, *31*, 61-70.

Silliman, K., Rodas-Fortier, K., Neyman, M. (2004). A survey of dietary and exercise habits and perceived barriers to following a healthy lifestyle in a college population. *Californian Journal of Health Promotion*, *2*, 10-19.

Speakman, J., Walker, H., Walker, L., Jackson, D. (2005). Associations between BMI, social strata and the estimated energy content of foods. *International Journal of Obesity*, *29*, 1281-1288.

Wallace, L.,Buckworth, J., Kirby, T., Sherman, M. (2000). Characteristics of exercise behavior among college students: Applications of social cognitive theory to predicting stage of change. *Preventive Medicine*, *31*, 494-505.

Winkleby, M., Gardner, C., Taylor, C. (1996). The influence of gender and socioeconomic factors on Hispanic/white differences in body mass index. *Preventative Medicine*, *25*, 203-211.