Eating disorder risk, exercise dependence, and body weight dissatisfaction among female nutrition and exercise science university majors

Natalie Harris
David Gee
Debra D'Acquisto
Dana Ogan
Kelly Pritchett

Follow this and additional works at: https://digitalcommons.cwu.edu/cotsfac

Part of the Behavioral Medicine Commons, Health and Physical Education Commons, and the Sports Sciences Commons
Eating disorder risk, exercise dependence, and body weight dissatisfaction among female nutrition and exercise science university majors

NATALIE HARRIS¹, DAVID GEE¹, DEBRA D’ACQUISTO², DANA OGAN¹ and KELLY PRITCHETT*²

¹Department of Nutrition, Exercise, and Health Sciences, Central Washington University, Ellensburg, WA, USA
²Department of PE & Public Health, Central Washington University, Ellensburg, WA, USA

(Received: February 12, 2015; revised manuscript received: June 30, 2015; accepted: July 11, 2015)

INTRODUCTION

Eating disorders are defined in the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013) into 4 categories: bulimia nervosa, anorexia nervosa, binge eating disorder and other specified feeding or eating disorders. Although eating disorders only affect a small percentage of the general population, they typically begin between 18–21 years of age, which categorizes college-age students as a high-risk group (Hudson, Hiripi, Popem & Kessler, 2007). Furthermore, college students who are majoring in careers closely related to nutrition and exercise science majors, compared to students outside of these career pathways. METHODS: Participants (n = 89) were divided into three groups based on major; Nutrition majors (NUTR; n = 31), Exercise Science majors (EXSC; n = 30), and other majors (CON; n = 28). Participants were given the EAT-26 questionnaire and the Exercise Dependence Scale. BWD was calculated as the discrepancy between actual BMI and ideal BMI. Results: The majority of participants expressed a desire to weigh less (83%) and EXSC had significantly (p = .03) greater BWD than NUTR. However, there were no significant differences in eating disorder risk or exercise dependence among majors. Discussion and Conclusions: This study suggested there was no significant difference in eating disorder risk or exercise dependence between the three groups (NUTR, EXSC, and CON).

METHODS

Participants

Female college students majoring in Nutrition (NUTR) (n = 31), Exercise Science (EXSC) (n = 30), and majors other than Nutrition and Exercise Science representing a con-
Eating disorder and exercise dependence risk

Eating disorder and exercise dependence risk

Statistical analysis

A between groups design was employed to compare basic descriptive characteristics (mean ± SD) for each group (NUTR, EXSC, and CON). Data from each population (NUTR, EXSC, and CON) was compared using a one way ANOVA to examine EAT-26 scores, EDS scale scores, BMI, actual weight, ideal weight, the three subscales of the EAT-26, and BWD. A Bonferonni post-hoc was employed when significant differences were found. Prevalence of EAT-26 risk among the three majors were analyzed using a Contingency Chi-square analysis. A two-tailed, two-sample unequal variance t-test was used to compare differences in actual vs. ideal body weight within each group. A correlation analysis was used to compare EAT-26 scores to EDS scores. Data was analyzed using the SPSS (Statistical Package for Social Sciences) version 21 and Microsoft Excel version 2007. An alpha level of \( p \leq 0.05 \) was used to determine significant difference.

Ethics

Interested participants who were currently undergoing treatment for an eating disorder were advised to participate at their medical providers’ discretion. The Institutional Review Board of Central Washington University approved all of the study procedures prior to data collection.

RESULTS

Participants \((n = 89)\) were divided into three groups based on major, NUTR, EXSC, or CON. Descriptive characteristics (mean ± SD) among the three groups are outlined in Table 1. There was a positive relationship between EAT-26 scores and EDS \((p \leq .001, r = .622)\) for all groups, and within groups; NUTR \((p \leq .001, r = .71)\), EXSC \((p = .001, r = .58)\), and CON \((p = .001, r = .61)\).

Table 1. Descriptive characteristics, EAT-26 scores and subscale scores, Mean BMI and Body Weight Dissatisfaction

<table>
<thead>
<tr>
<th></th>
<th>NUTR ((n = 31))</th>
<th>EXSC ((n = 30))</th>
<th>CON ((n = 28))</th>
<th>(P)-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (yrs)</td>
<td>21.42 ± 1.48</td>
<td>21.33 ± 1.35</td>
<td>21.61 ± .916</td>
<td>.72</td>
</tr>
<tr>
<td>EAT-26 total score</td>
<td>6.58 ± 7.084</td>
<td>7.13 ± 7.09</td>
<td>8.07 ± 7.20</td>
<td></td>
</tr>
<tr>
<td>Dieting</td>
<td>4.58 ± 5.065</td>
<td>4.60 ± 4.93</td>
<td>5.71 ± 5.2</td>
<td>.64</td>
</tr>
<tr>
<td>Bulimia/Food pre-occ.</td>
<td>4.2 ± 1.432</td>
<td>0.50 ± 1.83</td>
<td>0.39 ± 1.37</td>
<td>.96</td>
</tr>
<tr>
<td>Oral control</td>
<td>1.58 ± 2.062</td>
<td>2.03 ± 2.16</td>
<td>1.96 ± 1.64</td>
<td>.63</td>
</tr>
<tr>
<td>Actual BMI (kg/m²)</td>
<td>22.25 ± 2.55</td>
<td>24.78 ± 5.31</td>
<td>23.83 ± 3.96</td>
<td>.056</td>
</tr>
<tr>
<td>Ideal BMI (kg/m²)</td>
<td>20.79 ± 1.67</td>
<td>22.18 ± 2.68</td>
<td>22.44 ± 2.69</td>
<td>.02</td>
</tr>
<tr>
<td>BWD (kg/m²)</td>
<td>1.69 ± 1.44</td>
<td>3.18 ± 3.02</td>
<td>1.87 ± 1.98</td>
<td>.03</td>
</tr>
</tbody>
</table>

Values expressed as mean ± SD.
Different superscripts within a row indicate significant differences, ANOVA, Bonferroni post hoc test \((p \leq .05)\).

EAT-26 scores

Mean ± SD scores and subscale scores are outlined in Table 1. There were no significant differences between majors and EAT-26 subscale scores, supplemental behavioral questions, or eating disorder risk. Results of a chi-squared analysis revealed 19.4% (n = 6) NUTR participants were “at risk” compared to 33.3% (n = 10) in EXSC and 42.9% (n = 12) in the control group ($\chi^2 = 3.84$) in the control group ($p = 0.15$).

Body weight dissatisfaction

All participants except two (CON n = 1, EXSC n = 1) expressed BWD (BWD: actual weight ≠ ideal weight). There was a significant ($p = .03$) difference in BWD between NUTR and EXSC, with EXSC expressing the greatest BWD and NUTR expressing the least. Table 1 illustrates the magnitude of BWD among the three groups. NUTR and EXSC displayed a significant difference ($p \leq .05$) between their actual and ideal body weight (NUTR $p = .05$, EXSC $p = .01$) (Table 2). Among the three groups, 83% of participants expressed a desire to weigh less.

<table>
<thead>
<tr>
<th>Major</th>
<th>Actual</th>
<th>Ideal</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTR (n = 31)</td>
<td>60.79 ± 7.62</td>
<td>57.24 ± 6.27</td>
<td>0.05*</td>
</tr>
<tr>
<td>EXSC (n = 30)</td>
<td>67.71 ± 11.97</td>
<td>58.98 ± 12.66</td>
<td>.01*</td>
</tr>
<tr>
<td>CON (n = 28)</td>
<td>65.1 ± 13.37</td>
<td>60.37 ± 9.24</td>
<td>0.13</td>
</tr>
</tbody>
</table>

$t$-Test * indicates significant difference ($p \leq .05$).

Exercise dependence

The mean total EDS score was 47.48 ± 17.76 with no significant difference ($p = .33$) in total scores between majors (CON 45.96 ± 19.47, NUTR 45.06 ± 15.91, EXSC 51.40 ± 17.82). According to a frequency analysis of the EDS scores, 25% of CON, 16% of NUTR, and 36% of EXSC were identified as “at risk” for exercise dependence. There was a significant difference ($p = .01$) in the “Time” subscale scores between groups, which indicates a great deal of time spent in activities necessary to obtain exercise. A Bonferroni post-hoc revealed EXSC (9.20 ± 4.10) scored significantly higher ($p = .02$) than CON (6.50 ± 3.65) for “Time”.

DISCUSSION

The purpose of this study was to examine the prevalence of eating disorder risk, exercise dependence, and BWD among Nutrition and Exercise Science students. Based on the pressures to fit “the image” within careers in these two disciplines, research is warranted to examine the relationship between these majors and the potential for eating disorder risk and exercise dependence (Borgen & Corbin, 1987; Kiziltan & Karabudak, 2008).

This study suggested no significant difference in overall risk for developing an eating disorder among groups, which is similar to other findings (Akdeveliouglu & Huseyin, 2010; Kiziltan & Karabudak, 2008). Research examining the prevalence of eating disorder risk among Nutrition students have found eating disorder risk among Nutrition majors to be similar to that of the general population (Kiziltan & Karabudak, 2008; Korinth, Schiess & Westenhoefer, 2009) while some have suggested Nutrition students are at an increased risk (Bo et al., 2014; Drake 1989; Pedersen, Berglund & Dieken, 1996; Gonidakis et al., 2009; Reinstein, Koszewski, Chamberlin & Smith-Johnson, 1992; Worobey & Schoenfeld, 1999). Results from this study suggest less eating disorder risk in NUTR (19.4%) when compared to EXSC (33.3%), and CON (42.9%).

A positive correlation between EAT-26 scores and EDS-21 scores supports the suggestion that excessive exercise commonly co-exists with an eating disorder. Bratland-Sanda et al. (2011) also found a positive correlation between eating disorder symptoms and EDS-21 scores in eating disorder patients.

There were no significant differences in Exercise Dependence total scores between the groups, however; EXSC scored significantly higher on “Time” than CON. These findings may be expected when considering that students chose to major in EXSC due to their interest and enjoyment of exercise. Interestingly, Bratland-Sanda et al. (2011) examined exercise dependence scores in patients with longstanding eating disorders, and suggested comparable total scores on the EDS (55.8 ± 23.4) as EXSC in the current study (51.4 ± 17.82) (Bratland-Sanda et al., 2011). Similar to the current findings, Garman et al. (2004) suggested that 21.8% were at risk for exercise dependence using the Exercise Commitment Survey among a college population, while Meulemans, Pribis, Grajales & Krivak (2014) suggested that 3.3% were at risk for exercise dependence using the EDS-21. Further research is warranted to examine the prevalence of Exercise Dependence in a college population.

Although all groups expressed BWD, the mean ideal BMI, and mean actual BMI were still within a normal BMI range. The findings that EXSC expressed the greatest BWD (3.18 ± 3.02, $p = .03$) and NUTR expressed the least (1.69 ± 1.44) could be related to the higher mean BMI in EXSC and lower mean BMI in NUTR. Although the majority of participants in NUTR (90%) were at a normal BMI, 84% reported wanting to “weigh less”. Similarly, Arroyo et al. (2010) suggested that Nutrition students with a normal BMI would choose a lower ideal body weight and desire to weigh less. Kiziltan and Karabudak (2008) reported “almost all (NUTR) thought they should have the ideal body image and have a healthy balanced diet because of the importance of physical appearances to a dietitian’s social successes” (p. 697). These results suggest that despite major, college students may experience similar cultural pressures to weigh less and “fit the image”.

CONCLUSIONS

This study suggested there was no significant difference in eating disorder risk using EAT-26 between the three groups (NUTR, EXSC, and CON). However, findings from this study suggest that there is a significant correlation ($p \leq .001$, $r = .62$) between eating disorder risk and exercise dependence risk.

Eating/exercise disorders have debilitating psychological and physical consequences which may influence a stu-
Eating disorder and exercise dependence risk

students’ ability to provide sound and healthy counseling in their career, and may impact their effectiveness with clients and overall professional success. Further research is warranted to examine the relationship between eating disorder risk, and exercise dependence.

Funding sources: No financial support was received for this study.

Authors’ contribution: KP: study concept & design, statistical & data analysis, interpretation of data, obtained funding, study supervision, full access to data, corresponding author; NH: study concept & design, statistical & data analysis, interpretation & collection of data, obtained funding, study supervision, full access to data; DG: study concept & design, interpretation of data, study supervision; DD’A: study concept & design, interpretation of data, study supervision; DO: interpretation of data, editing & formatting.

Conflict of interest: The authors declare no conflict of interest.

REFERENCES