**CBÜ Beden Eğitimi ve Spor Bilimleri Dergisi**
*CBU Journal of Physical Education and Sport Sciences*
Volume: 20, Issue: 2, 2025
E-ISSN: 2149-1046
DOI: 10.33459/cbubesbd.1558373
URL: https://dergipark.org.tr/tr/pub/cbubesbd

# Evaluation of Muscularity-Focused Eating Disorder and Related Factors in Male University Students

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**Research Article**
Received: 17/10/2024 Accepted: 19/04/2025 Published: 31/07/2025

## Abstract

Eating disorders are a common public health problem in adolescents. However, studies have generally focused on female adolescents and eating disorders in males have been relatively less researched. This study aimed to examine the risk of muscularity-oriented eating disorders in male university students and the factors associated with this condition. The study was conducted with 601 male university students studying at a state university in Turkey. The students' demographic data were recorded, and anthropometric measurements were taken. This study utilized the Drive for Muscularity Scale (DMS) to determine the desire to be muscular, the Eating Disorders Screening Tool (SCOFF) to detect eating disorders, the Muscularity-Oriented Eating Test (MOET-TR) to specify muscularity-oriented eating disorders, and the International Physical Activity Questionnaire (IPAQ-Short Form) to identify physical activity status. The mean MOET score of the students was 0.79 ± 0.76 and the mean IPAQ score was 36.48 ± 0.57. It was inferred that the physical activity levels of the students increased as their MOET and DMS scores increased. Also, there was a positive linear relationship between MOET scores and body weight, body mass index (BMI), waist, hip and upper middle arm circumference measurements. In conclusion, it was observed that male university students have a high risk of muscularity drive and muscularity-oriented eating disorder, and this affects physical activity level and anthropometric measurements. For this reason, it is thought that muscularity-focused eating disorder should be focused on and awareness should be raised especially in men.
**Keywords:** Drive for muscularity, Muscularity-focused eating disorder, Eating disorders, Male students

# Erkek Üniversite Öğrencilerinde Kaslılık Odaklı Yeme Bozukluğu ve İlgili Faktörlerin Değerlendirilmesi

## Öz

Yeme bozuklukları adölesanlarda yaygın bir halk sağlığı sorunudur. Ancak, bu konuda yürütülen çalışmaların genellikle kız adölesanlara odaklandığı ve erkeklerdeki yeme bozukluklarının nispeten daha az araştırıldığı göze çarpmaktadır. Bu çalışmada, erkek üniversite öğrencilerinde kaslılık odaklı yeme bozukluğu riski ve bu durumla ilişkili faktörlerin incelenmesi amaçlanmıştır. Çalışma Türkiye'de bir devlet üniversitesinde öğrenim gören 601 erkek üniversite öğrencisi ile yürütülmüştür. Öğrencilerin demografik verileri kaydedilmiş ve antropometrik ölçümleri alınmıştır. Bireylerin kaslı olma isteklerini belirlemek için Kaslı Olma Dürtüsü Ölçeği (KODÖ), yeme bozukluklarını saptamak için Yeme Bozuklukları Ölçeği (REZZY), kaslılık odaklı yeme bozukluklarını saptamak için Kaslılık Odaklı Yeme Testi (MOET-TR), fiziksel aktivite durumlarını belirlemek için Uluslararası Fiziksel Aktivite Formu (IPAQ-Kısa Form) ölçeği uygulanmıştır. Öğrencilerin MOET puanı ortalaması 0.79±0.76, KODÖ puan ortalaması ise 36.48 ± 0.57 olarak belirlenmiştir. Öğrencilerin MOET ve KODÖ puanları arttıkça fiziksel aktivite seviyelerinin arttığı tespit edilmiştir. Ayrıca MOET puanları ile BKİ, bel çevresi, kalça çevresi, vücut ağırlığı ve ÜOKÇ ölçümleri arasında pozitif doğrusal ilişki olduğu belirlenmiştir. Erkek üniversite öğrencilerinde kaslı olma dürtüsü ve kaslılık odaklı yeme bozukluğu riskinin yüksek olduğu ve bu durumun fiziksel aktivite seviyesini ve antropometrik ölçümleri etkilediği görülmüştür. Bu sebeple literatürde nispeten yeni bir yeme bozukluğu olarak karşımıza çıkan kaslılık odaklı yeme bozukluğuna odaklanılması ve özellikle erkeklerde bu konuya yönelik farkındalık oluşturulması gerektiği düşünülmektedir.
**Anahtar Kelimeler:** Kaslı olma dürtüsü, Kaslılık odaklı yeme bozukluğu, Yeme bozuklukları, Erkek öğrenciler

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## INTRODUCTION

Eating disorders are clinical mental disorders in which eating behavior is severely impaired and associated with high medical and psychiatric comorbidity, low quality of life, and high mortality (Barakat et al., 2023). Eating disorders can occur at any age, but it is reported that the prevalence of eating disorders such as anorexia nervosa and bulimia nervosa tends to increase in adolescence (Jebeile et al., 2021). In addition, it is also stated that there is an increase in the frequency of eating disorders, especially unspecified eating disorders in adolescents because of the excessive anxiety about physical appearance (Filipponi et al., 2022; Herpertz-Dahlmann et al., 2015).

It has been reported that the physiopathology of eating disorders is characterized by the ideal of a thin body, the fear of gaining body weight, and the compensatory behaviors developed for this reason. However, it is also stated that dissatisfaction with body image in men is characterized by a greater body desire and the desire to gain body weight (Herpertz-Dahlmann et al., 2015; Parent, 2013). Men perceive the ideal body image as a low body fat percentage and large muscle mass, and when their perceived body shape and/or size differ from this ideal, they may develop eating disorder (ED) behaviors (Convertino et al., 2022). In contrast to the thin body ideal attributed to women, men focus on eating behaviors focused on muscularity (Herpertz-Dahlmann et al., 2015; Parent, 2013).

Muscularity-focused eating disorder refers to disordered eating patterns in pursuit of muscular increase. In such kind of a disorder, eating behaviors are designed to increase muscularity and reduce body fat following male body ideals. These eating behaviors include efforts to gain body weight, high protein consumption, and strict practices in terms of eating timing and frequency (Herpertz-Dahlmann et al., 2015; Murray et al., 2019). Eating behaviors such as blending meals into liquid form to increase calorie intake, incorporating "cheat meals" to purportedly boost metabolic rate, and ensuring constant availability of pre-planned meals are observed in this eating disorder, which is characterized by dietary changes aimed at gaining lean muscle, affecting the quality of life of individuals (Anderson et al.,2024). In addition, it has been reported that muscularity-oriented eating disorders may also be associated with compulsive exercise behaviors (Cunningham et al., 2022). Exercise addiction is characterized as a compensatory behavior associated with eating disorders also exercise performed as a compulsive action can also lead to physical and psychological harm (Hamurcu 2023). It is emphasized that all these behavior models can cause serious physiological complications in individuals (Herpertz-Dahlmann et al., 2015; Murray et al., 2019).

Nowadays, especially with the increase in 'fitspiration' content that we encounter on social media, the muscular body structure has begun to be seen as more ideal. Accordingly, there are efforts to better understand the antecedents and consequences of this situation (Anderson et al., 2024). Considering the prevalence of muscularity concerns in men, it is important to evaluate eating behaviors focused on muscularity. Research into eating disorders has mostly focused on disordered behaviors and cognitive traits that have been found to be more common among women. But it is also important to understand that men's weight concerns are related to muscularity rather than a desire for thinness (Glazer et al., 2021).

In this context, this study was planned and conducted to evaluate muscularity-oriented eating disorders in male university students and the factors affecting this condition.

## METHOD

### Research Model

This cross-sectional and descriptive study was conducted with male students studying at Erciyes University 1 November 2023-28 February 2024.

### Universe-Sample

The study population was determined as individuals over the age of 18 studying at Erciyes University faculties; students with any physical disabilities and/or psychological disorders were not included in the study. The study aimed to reach the all the male students aged over 18 without any physical/psychological disorders, but the study was completed with 601 male students who met the inclusion criteria and agreed to participate in the study.

### Ethical Approval

For this study, approval was obtained from the Erciyes University Social Scince Ethics Committee (Application Number:460) and study permission was obtained from the Erciyes University rectorate. In addition, all individuals participating in the study were informed about the study, and their written and verbal consent was obtained.

### Data Collection

Demographic information of the individuals was obtained with the help of a questionnaire form; body weight, height, waist, hip, and upper middle arm circumference measurements were taken by the researchers in accordance with the technique. Body mass index (BMI) [weight (kg)/height (m)$^2$] was calculated from the weight and height measurements. Body mass index was evaluated according to the WHO adult classification (WHO, 2023).

### Data Collection Tools

The SCOFF Eating Disorders Scale was administered to determine the risk of eating disorders, the Muscularity-Oriented Eating Test (MOET-TR) was administered to determine muscularity-oriented eating disorder status, the Drive for Muscularity Scale (DMS) was administered to determine muscularity desires, and the International Physical Activity Questionnaire (IPAQ-Short Form) was administered to determine physical activity status.

***SCOFF Eating Disorders Scale:*** The SCOFF Eating Disorders Scale is an easy-to-administer and easy-to-score scale designed to determine the risk status of eating disorders; the Turkish validity and reliability study of the scale was conducted by Aydemir et al (Aydemir et al., 2015). The scale consists of 5 questions investigating eating control, food intake, and body

dissatisfaction. In the evaluation of the scale, 1 point is given to each item with a 'yes' answer, and 2 or more points are associated with the risk of an eating disorder (Morgan et al., 2000).

***Muscularity Oriented Eating Test (MOET-TR):*** The muscularity-oriented Eating Test (MOET) is a scale developed by Murray et al. in 2019 to detect muscularity-oriented eating disorders. The Turkish validity and reliability of the scale were conducted by Çalışkan (Çalışkan et al., 2021). The scale consists of 15 items and is evaluated on a 5-point Likert scale (0 = Absolutely not true, 1 = Rarely true, 2 = Sometimes true, 3 = Usually true, 4 = Always true). The total score is calculated as the average of the scores. Higher scores on the scale indicate an increased risk of muscularity-oriented malnutrition (Murray et al., 2019).

***Drive for Muscularity Scale (DMS)***: The Turkish validity and reliability study of this scale, which was developed to measure attitudes and behaviors toward being muscular, was conducted by Selvi and Bozo in 2019. (Selvi and Bozo., 2011) The original Turkish form consists of three sub-dimensions: attitudes towards muscularity (ATM), muscularity-oriented training behaviors (MTB), and muscularity-oriented eating and supplement use (MESU). The items are evaluated on a 6-point Likert-type scale. High scores obtained from the scale and its sub-factors indicate a high level of desire to be muscular (McCreary., 2007).

***International Physical Activity Questionnaire (IPAQ-Short Form):*** The Turkish validity and reliability of this form, which was created to determine the physical activity status of individuals, was conducted by Öztürk (Öztürk et al., 2023). The calculation of the total score of the short form includes the sum of the duration (minutes) and frequency (days) of walking, moderate-vigorous activity, and vigorous activity, and a score as MET minute is obtained from these calculations. One MET-min is calculated by multiplying the minutes of activity by the MET score (Craig et al., 2003).

**Analysis of Data**

The data obtained from the study were analyzed using the SPSS 22.0 program. The assumption of conformity of the data to normal distribution was tested with skewness and kurtosis values. Skewness and kurtosis values between -2, and +2 were considered normal (Tabachnick et al., 2013). Using multivariate statistics. Boston, Pearson). Variables that fit the normal distribution are given as mean±standard deviation values, and variables that do not fit the normal distribution are given as median (minimum-maximum) values. Data between three or more groups were compared using a one-way analysis of variance (ANOVA). The Pearson correlation test was used to examine the relationships between variables. $p<0.05$ level was considered statistically significant.

## FINDINGS

**Table 1.** Evaluation of the students' scores on the CODS, YTTT-40, and MOET-TR scales

| Male Students (n=601) | |
|---|---|
| **Scale** | **$\bar{X}$ ± SD** |
| **DMS Total** | 36.48 ± 0.57 |
| **ATM sub-dimension** | 20.26 ± 0.34 |
| **MTB sub-dimension** | 8.78 ± 0.18 |
| **MESU sub-dimension** | 7.42 ± 0.16 |
| **MOET Total** | 0.79 ± 0.76 |
| **SCOFF Total** | 0.77 ± 0.04 |

DMS: Drive for muscularity scale, ATM: Attitudes towards muscularity, MTB: Muscularity-oriented training behaviors, MESU: Muscularity-oriented eating and supplement use; MOET: Muscularity oriented eating test

A total of 601 male university students with a mean age of 22.04±3.9 years participated in the study. Table 1 shows the evaluation of the scale scores of the students. The mean DMS total score of the students was 36.48 ± 0.57, and the mean scores obtained from the sub-dimensions of the scale were 20.26 ± 0.34 for the ATM, 8.78 ± 0.18 for the MTB, and 7.42 ± 0.16 for the MESU. According to the total score of SCOFF, 20.5% of the students were found to have an eating disorder risk (Data not shown in the table).

**Table 2.** Evaluation of anthropometric measurements of the students

| Male Students (n=601) | |
|---|---|
| **Variable** | **$\bar{X}$ ± SD/ Median (Min-Max)** |
| **Height (cm)** | 178.86 ± 0.24 |
| **Body Weight (kg)** | 75.91 ± 0.50 |
| **BMI (kg/m )$^2$** | 23.69 ± 0.14 |
| **Waist circumference (cm)** | 86.06 ± 0.39 |
| **Hip circumference (cm)** | 100.01 ± 0.36 |
| **Upper middle arm circumference (cm)** | 31.51 ± 0.17 |
| **Waist/hip ratio** | 0.85 (0.70-2.77) |
| **Waist/height ratio** | 0.48 ± 0.002 |

BMI: Body Mass Index

Data on anthropometric measurements of the students are given in Table 2. The mean BMI of the students was determined as 23.69 ± 0.14 kg/m$^2$. In addition, 64.4% of the students were found to have normal BMI (data not shown in the table).

**Table 3.** Evaluation of scale scores of students according to BMI classification

| Mean scores | BMI Classification | | | | |
|---|---|---|---|---|---|
| | **Weak** | **Normal** | **Slightly fat** | **Obese** | **p** |
| **DMS** | 38.69±12.42 | 36.46±14.00 | 36.10±14.52 | 37.44±13.98 | 0.831 |
| **ATM** | 22.53±8.57 | 20.33±8.53 | 19.57±8.05 | 22±8.68 | 0.246 |
| **MTB** | 7.26±3.40 | 8.72±4.55 | 9.19±4.83 | 8.33±4.31 | 0.214 |
| **MESU** | 8.88±3.64 | 7.41±3.76 | 7.26±4.42 | 7.11±4.13 | 0.266 |
| **MOET** | 0.59±0.54 | 0.73±076$^a$ | 0.93±0.80$^b$ | 1.00±0.63 | 0.007* |
| **SCOFF** | 0.46±0.76$^a$ | 0.60±0.89$^a$ | 1.14±1.11$^b$ | 1.48±1.08$^b$ | <0.001 |

One way ANOVA; *p<0.05; $^{a,b}$ Post hoc indicates that there is a difference between the groups in which it is common., DMS: Drive for muscularity scale, ATM: Attitudes towards muscularity, MTB: Muscularity-oriented training behaviors, MESU: Muscularity-oriented eating and supplement use; MOET: Muscularity oriented eating test

When the scale scores of the students according to BMI classification were analyzed, it was determined that there was a significant difference between MOET and SCOFF scale scores according to BMI classification (p<0.05) (Table 3).

**Table 4.** Evaluation of the relationship between students' scale scores

| | | ATM | MTB | MESU | DMS | MOET | SCOFF | IPAQ |
|---|---|---|---|---|---|---|---|---|
| **ATM** | **r** | - | 0.47 | 0.41 | 0.87 | 0.37 | 0.18 | 0.12 |
| | **p** | - | 0.001** | 0.001** | 0.001** | 0.001** | 0.001** | 0.001** |
| **MTB** | **r** | 0.47 | - | 0.71 | 0.81 | 0.65 | 0.30 | 0.25 |
| | **p** | 0.001** | - | 0.001** | 0.001** | 0.001** | 0.001** | 0.001** |
| **MESU** | **r** | 0.41 | 0.71 | - | 0.76 | 0.55 | 0.16 | 0.20 |
| | **p** | 0.001** | 0.001** | - | 0.001** | 0.001** | 0.001** | 0.001** |
| **DMS** | **r** | 0.87 | 0.81 | 0.76 | - | 0.59 | 0.25 | 0.21 |
| | **p** | 0.001** | 0.001** | 0.001** | - | 0.001** | 0.001** | 0.001** |
| **MOET** | **r** | 0.37 | 0.65 | 0.55 | 0.59 | - | 0.42 | 0.25 |
| | **p** | 0.001** | 0.001** | 0.001** | 0.001** | - | 0.001** | 0.001** |
| **SCOFF** | **r** | 0.18 | 0.30 | 0.16 | 0.25 | 0.42 | - | 0.92 |
| | **p** | 0.001** | 0.001** | 0.001** | 0.001** | 0.001** | - | 0.02* |
| **IPAQ** | **r** | 0.12 | 0.25 | 0.20 | 0.21 | 0.25 | 0.09 | - |
| | **p** | 0.001** | 0.001** | 0.001** | 0.001** | 0.02* | 0.001** | - |

DMS: Drive for muscularity scale, ATM: Attitudes towards muscularity, MTB: Muscularity-oriented training behaviors, MESU: Muscularity-oriented eating and supplement use; MOET: Muscularity Oriented Eating Test; r: Pearson correlation analysis; *p<0.05; **p<0.001

The correlation between the scale scores of the students is given in Table 4. It was observed that there was a positive linear relationship between the total score of the students and the subscale scores of the students. In addition, significant correlations were found between MOET and SCOFF scores and the total score and sub-dimension scores of the DMS. It was determined that IPAQ scores increased as students' MOET and DMS scores increased (p<0.05).

**Table 5.** Evaluation of the relationship between anthropometric measurements of students and scale scores

| | | BMI | Waist circumference | Hip circumference | Body Weight | UMAC |
|---|---|---|---|---|---|---|
| **ATM** | **r** | -0.03 | -0.08 | -0.05 | -0.02 | -0.01 |
| | **p** | 0.40 | 0.04* | 0.28 | 0.64 | 0.86 |
| **MTB** | **r** | 0.07 | -0.017 | 0.04 | 0.12 | 0.26 |
| | **p** | 0.10 | 0.69 | 0.33 | 0.001** | 0.001** |
| **MESU** | **r** | -0.06 | -0.89 | -0.04 | -0.01 | 0.16 |
| | **p** | 0.13 | 0.03* | 0.33 | 0.81 | 0.001** |
| **DMS** | **r** | 0.02 | -0.08 | -0.02 | 0.03 | 0.13 |
| | **p** | 0.71 | 0.06 | 0.58 | 0.52 | 0.001** |
| **MOE** | **r** | 0.195 | 0.11 | 0.14 | 0.20 | 0.24 |
| | **p** | 0.001** | 0.01* | 0.001** | 0.001** | 0.001** |
| **IPAQ** | **r** | 0.30 | -0.03 | 0.04 | 0.90 | 0.16 |
| | **p** | 0.43 | 0.41 | 0.37 | 0.03* | 0.001** |
| **SCOF** | **r** | 0.31 | 0.25 | 0.25 | 0.33 | 0.16 |
| | **p** | 0.001** | 0.001** | 0.001** | 0.001** | 0.001** |

DMS: Drive for muscularity scale, ATM: Attitudes towards muscularity, MTB: Muscularity-oriented training behaviors, MESU: Muscularity-oriented eating and supplement use; MOET: Muscularity Oriented Eating Test; BMI: Body Mass Index, UMAC: Upper middle arm circumference; r: Pearson correlation analysis; *p<0.05; **p<0.001

It was determined that there was a positive linear relationship between the students' MOET and SCOFF scores and BMI, waist circumference, hip circumference, body weight, and UMAC measurements. In addition, it was observed that as IPAQ scores increased, body weight and UMAC measurements increased (p<0.05) (Table 5).

## DISCUSSION AND CONCLUSION

Individuals may exhibit a range of eating behaviors that focus on emphasizing their muscularity, increasing their muscularity, and reducing their body fat. These eating behaviors, defined as muscularity-focused eating disorders, are a relatively new concept in the literature (Anderson et al., 2024; Murray et al., 2019). In our study, which was planned to make an up-to-date contribution to the literature by evaluating muscularity-oriented eating disorder and the factors affecting this condition, the MOET scale, which evaluates muscle-oriented disordered eating, was used. High scores on this scale, which has no cut-off point, indicate an increased risk of muscle-focused eating disorder. In our study, the mean MOET score of the students was 0.79±0.76 (Table 1). In a study conducted on female university students, this score was found to be 1.08±0.91; in another study, it was found to be 1.12±0.92 (Cunningham et al., 2021; Cunningham et al., 2022). High scores obtained from the scale, which can be scored 4 points in total, indicate that eating behaviors to increase muscle ratio have developed. For this reason, the results of both this study and other studies in the literature are noteworthy. In addition, the general eating disorder risk of male students was also evaluated in our study and it was observed that 20.5% of the students had an eating disorder risk according to the SCOFF scale (data not shown in the table). Although eating behavior disorders are mostly focused on women, it should not be forgotten that this condition can occur in men in different ways (Nagata et al., 2020). It is reported that studies evaluating the risk of eating behavioral disorders in men are more limited than studies in women, but it is emphasized that men have a similar risk to women in terms of unhealthy eating behaviors (Gorrell et al., 2021, Spratt et al., 2022). In this study, the finding that the risk of eating disorders in men was 20.5% confirms these data.

The drive to be muscular can be considered as an individual's perception that he/she is not muscular enough and has to increase body muscle mass. Women's drive for thinness and men's drive for muscularity may be culturally gender-specific and reflect body shape ideals. In modern societies, the V-shaped muscular male body is presented as the ideal male body image and people who are far from this body type are reflected as unsuccessful. As a result of this situation, which is seen as the main reason for body dissatisfaction in men, men may develop health-threatening behaviors (Eik- Nes et al., 2018; Lennon et al., 2021; Schneider et al., 2016). In our study, the Drive for Muscularity Scale was used to measure men's desire to be muscular. The mean subscale and total scores obtained from the scale, which consists of three sub-dimensions: attitudes towards muscularity, muscularity-oriented training behaviors, and muscularity-oriented eating and supplement use, were 20.26±0.34, 8.78±0.18, 7.42±0.16, and 36.48±0.57, respectively (Table 1). In a study conducted with athletes in Turkey, these values were found to be 21.8±7.7, 12.2±4.0, 9.1±3.9, and 43.2±12.3, respectively (Yarar et al., 2022). In our study, these results, which were found to be close to athletes in both sub-dimensions and total scores of the scale, indicate that the urge to be muscular is high in male university students. In a systematic review published on the subject, it was revealed that the basis of men's desire for muscularity is influenced by personality traits such as perfectionism and risk-taking tendency, as well as beliefs and attitudes such as commitment to masculine norms, objectification of women and sexist attitudes. However, it was stated that these studies were largely limited to men in Western cultures (Lennon et al., 2021). In this context, it is thought that these results are important in terms of expressing Türkiye.

Although the urge to be muscular is considered an indicator of an active and healthy lifestyle, it should be taken into consideration that it may have negative effects on both psychological and physical health. It is seen that individuals with this drive also make some changes in their eating habits (Hamurcu, 2023). In this study, it was determined that an increase in the total and subscale scores of the drive-to-be-muscular scale increased the risk of both general eating disorder and muscularity-focused eating disorder (Table 4). It has been reported that the drive to be muscular and muscularity-focused eating behaviors are associated with changes in eating habits as well as compulsive exercise behaviors (Lavender et al., 2017; Lennon and Johnson, 2021). In an investigation on the topic, it was reported that the drive to be muscular was associated with muscularity-focused eating disorder and exercise addiction (Hamurcu, 2023). In this study, verifying these findings, the drive to be muscular and the risk of muscularity-oriented eating disorder were also found to be positively associated with physical activity level (Table 4).

While eating behavior disorders in women are identified with a desire for a thinner body, in men this is characterized by a larger body desire and a desire to gain body weight (Spratt et al., 2022). These different body ideals are also reported to cause different behavioral patterns to emerge between genders (Lavender et al., 2017). In the literature, there is no study evaluating the effect of muscularity-oriented eating disorders on anthropometric measurements. In this study, it was observed that body weight, waist circumference, hip circumference, UMAC, and BMI increased as the risk of muscularity-oriented eating disorders increased in male university students (Table 5). It was also found that slightly obese students had a higher risk of muscularity-oriented eating disorder than normal-weight students (Table 3). These results confirm that muscularity-oriented eating disorder is characterized by a desire for a larger body.

In this study, male university students were found to have a high risk of muscularity drive and muscularity-oriented eating disorder. It was determined that as the drive to be muscular and muscularity-oriented eating increased in students, their physical activity levels also increased. These results reveal that muscularity-focused eating disorder, which is a relatively new eating disorder in the literature, should be focused on and awareness should be raised especially in men.

**Conflict of Interest:** There is no conflict of interest.

**Researchers' Statement of Contribution Rate:** Research Design SÇ, Statistical analysis SÇ and HTB; Preparation of the article SÇ, Data Collection was carried out by SÇ and HTB.

**Ethical Approval**
**Board Name:** Erciyes Üniversitesi Sosyal ve Beşeri Bilimler Etik Kurulu
**Date:** 28/11/2023
**Issue/Decision Number:** 460

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