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Correlation of Physical Activity, Risk of Eating Disorder, and Body Composition in Young Female Students

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Abstract: *Introduction: Body composition, physical activity, and the risk of eating disorders play a specific role in shaping the health of young female students during their first year of university, a period in which they develop autonomy, self-regulation, social interaction, and learning skills. The aim of this study was to determine the associations between physical activity levels, body composition, and the risk of eating disorders among female students aged 19–21 years at the University of Banja Luka. Methodology: A cross-sectional epidemiological observational study included a representative sample of 408 healthy female students with a mean age of 20.5 years. Data were collected using a brief sociodemographic questionnaire, the International Physical Activity Questionnaire (IPAQ), the Eating Attitudes Test-26 (EAT-26), and the OMRON BF 511 digital medical device for body composition assessment.Results: The majority of participants (76.2%) were classified as highly physically active. Participants displayed ideal body composition parameters: BMI 22.1 ± 3.2, body fat percentage 31.80 ± 6.47%, and skeletal muscle percentage 28.15 ± 2.81%, while 16.7% of participants were at risk for eating disorders. Correlation analyses between EAT-26 subscales—Dieting, Bulimia, and Oral Control and total IPAQ physical activity scores showed no statistically significant associations. ROC analysis confirmed that BMI, body fat percentage, and visceral fat percentage are not reliable for detecting individuals at risk for eating disorders. Conclusion: Understanding the relationships between body composition components, eating disorders, and physical activity levels is essential for planning effective strategies to promote and prevent psycho-physical health issues and ensure the well-being of young female students. This requires ongoing evaluation and research into biopsychosocial factors.*
Keywords: *body composition, physical activity, risk of eating disorders, young female students*

Introduction

The health profile of young women reflects a comprehensive assessment of health, encompassing physical, mental, and social well-being, while also addressing risks and needs specific to age and sex (WHO, 2025). Key components for understanding the holistic health profile of young women at the transitional stage between adolescence and early adulthood include body composition (BC) as a physiological/anthropometric characteristic, physical activity (PA) as a health-related behavior, and risk of eating disorders (RED) as a psychosocial factor. Each of these characteristics plays a distinct role in shaping women's health. Body composition and PA are measurable components: BC provides objective data on an individual's physical status and nutritional condition, whereas PA reflects an active lifestyle and serves as an important predictor of long-term health, energy levels, and mood. RED, on the other hand, represents a mental health domain that explains the formation of habits during specific life stages. In essence, these components can form a vicious cycle. For example, young women may experience dissatisfaction with their body composition, which can contribute to RED. Higher BMI, increased body fat percentage, and visceral fat are associated with greater RED, which is particularly relevant in women (Kwilosz et al., 2025). Furthermore, BC can create a pathological correlation between PA and RED: extreme physical activity may increase RED, particularly bulimic behaviors. For instance, students with higher PA levels also showed elevated RED; although increased PA is generally beneficial, it can become detrimental when linked to body dissatisfaction, thus exacerbating RED (Ruiz-Bravo, Ureña, Rodríguez-Rodríguez, Laiz & García-Merino, 2025). Vancampfort et al. (2020) emphasize that changes in PA are a key factor in the development and maintenance of RED, which cannot be ignored. Systematic reviews further support the behavioral and psychosocial interconnections. RED, driven by body dissatisfaction, can in turn influence PA, especially when exercise is motivated solely by the desire to achieve an ideal body image (Jiang, Y., & Meng,

X., 2025). Conversely, longitudinal studies by Rodgers et al. (2021) reinforce the connection and explore interactions between psychosocial factors (RED) and behavioral factors (PA changes) during critical transitional periods. This cyclical dynamic highlights the complexity of approaching and investigating these sequences, which is essential for planning preventive programs based on a student's health profile - a holistic, individualized approach (Ruiz-Bravo, P., Ureña, G. D., Rodríguez-Rodríguez, B., Laiz, N. M., & García-Merino, S., 2025; Saputra, Nugroho, Damayanty, & Asmawati, 2024). Given these considerations, a key question arises: can these associations also be observed in countries with lower socioeconomic status and limited awareness of sports and physical activity among young women?

Aim of the study: The aim of this study was to investigate the associations between physical activity, body composition, and the risk of eating disorders among female students aged 19–21 years at the University of Banja Luka.

Method

An observational, analytical epidemiological study with a cross-sectional (PEO) design was conducted between October 2019 and March 2021. The study sample consisted of 408 female students aged 19–21 years from the University of Banja Luka. Participants were recruited from multiple faculties, including the Faculty of Medicine and Health Sciences, the Faculty of Science and Arts, and Technical and Professional Faculties. Inclusion criteria were female students aged 18–21 years enrolled in the first and the second year of their undergraduate studies. Exclusion criteria included students outside the target age range, as well as those with acute or chronic medical conditions, hereditary disorders, physical deformities, or conditions requiring a medically prescribed diet.

Ethical approval for this study was obtained from the Ethics Committee of the Faculty of Medicine, University of Banja Luka, and all participants provided written informed consent prior to participation. The study was conducted in accordance with the ethical principles of the Declaration of Helsinki (2013) and did not pose any physical or psychological risks to participants, who were free to withdraw at any time without consequences. Research procedures were also carried out in compliance with local data protection regulations.

Participants first completed a brief sociodemographic questionnaire developed specifically for this study. Body composition was then assessed using the OMRON BF 511 digital medical device, which utilizes bioelectrical impedance analysis (BIA) to estimate body fat percentage and related body composition parameters. Physical activity levels were evaluated using the International Physical Activity Questionnaire (IPAQ) – Long version, a widely used and validated instrument for assessing physical activity in adult populations across different countries and cultural settings. Eating attitudes and disordered eating behaviors were assessed using the Eating Attitudes Test-26 (EAT-26), a standardized and validated screening tool commonly applied in research and clinical settings to identify risk of eating disorders in adolescents and young adults.

Stadiometer (SECA 700) is used to measure participant height following the protocol of the International Society for the Advancement of Kinanthropometry (ISAK). After recording height, age, and sex, body weight was entered into the OMRON BF 511 device, which then provided data on body mass index (BMI), body fat percentage, visceral fat level (fat surrounding internal organs), skeletal muscle percentage, and basal metabolic rate (the minimum number of calories required to maintain bodily functions at rest over 24 hours).

IPAQ – long version is a standardized and valided tool designed to assess physical activity (PA) levels in adults aged 15–69 years. It evaluates PA across four domains: work-related activity, transportation, household activities, and leisure-time activity. The questionnaire comprises 26 items, focusing on the frequency (days per week) and duration (hours and minutes per day) of activities in each domain. Physical activity levels are quantified in MET-minutes per week (Metabolic Equivalent of Task) and categorized into three levels: low, moderate, and high **(**Craig, Cora L., et al**.**.2003). According to results obtained from the IPAQ, three subgroups were formed: inactive/low physically active students (threshold <600 MET-minutes/week), moderately physically active students (meeting the activity level required for health benefits, 600–1,400 MET-minutes/week), and highly active students (activity level >1,500 MET-minutes/week).

The Eating Attitudes Test-26 (EAT-26) is a standardized self-report questionnaire widely used to screen for symptoms and behaviors associated with eating disorders (e.g., anorexia nervosa, bulimia nervosa, and other disordered eating patterns) in adolescents aged 13 years and older. The questionnaire contains 26 items divided into three subscales: Dieting (13 items), Bulimia and Food Preoccupation (6 items), and Oral Control (7 items). Responses are scored on a 6-point Likert scale (ranging from "Always" to "Never") and recoded into a 0–3 scoring system for analysis, resulting in a total score range of 0–78. Higher scores indicate a greater risk of eating disorders (Garner &

Garfinkel, 1989; Garner, Olmsted, Bohr, & Garfinkel, 1982; McLean et al., 2023).

The variables examined in this study included physical activity (assessed by IPAQ), eating disorder risk (assessed by EAT-26), and nutritional status, including body weight, body mass index (BMI), skeletal muscle percentage, body fat percentage, and visceral fat status.

Data were analyzed using SPSS version 21.0 for Windows. Statistical significance was set at $p < 0.05$. Descriptive statistics, including mean, standard deviation, median, minimum, maximum, frequencies, and percentages, were used to summarize sociodemographic characteristics, body composition, physical activity levels, and EAT-26 scores. Data normality was assessed with the Kolmogorov–Smirnov test, and internal consistency was evaluated using Cronbach's alpha (acceptable range: 0.70–0.80). Between-group differences were analyzed using the Mann–Whitney U test. Associations between physical activity levels and eating disorder risk were examined using Pearson or Spearman correlation coefficients, depending on data distribution, followed by multiple regression analysis.

Results

The study included 408 female students, aged 19–21 years, in their first or second year, from the following programs: Faculty of Medicine – Integrated Studies (44.1%), Health Sciences (10.3%), Faculty of Science and Mathematics (15.2%), Faculty of Philosophy (14.2%), Faculty of Architecture and Civil Engineering (4.4%), Faculty of Law (7.4%), and Faculty of Political Science (4.4%).

Anthropometric assessment of the participants (n = 408) showed a mean height of 168 cm, mean age of 20.5 years, and mean body mass of 63.1 kg. Based on body composition measurements using the OMRON BF device, we found that based on BMI, 8.1% of participants were underweight (<18), 76.2% had a normal BMI (18.5–24.9), 13.0% were overweight (25–29.9), 2.0% had mild obesity (30–34.9), and 0.7% were classified with severe obesity (35–39.9); no cases of extreme obesity (≥40) were observed. Visceral fat levels were within the normal range for all participants. Analysis of skeletal muscle percentage among the participants indicated that 5.9% had a low percentage (0–24.29%), 76.0% were within the normal range (24.3–30.3%), 16.7% had a high percentage (30.4–35.3%), and 1.5% had a very high percentage (≥35.4%). Analysis of skeletal muscle percentage for adult females aged 18–39 years indicated that 5.9% had a low percentage (0–24.29%), 76.0% were within the normal range (24.3–30.3%), 16.7% had a high percentage (30.4–35.3%), and 1.5% had a very high percentage (≥35.4%).

IPAQ was used to assess participants' physical activity levels. Descriptive analysis of total physical activity by domain showed the following median values: work-related physical activity (Median = 0 min/week; range 0–1890), transport-related activity (Median = 1386 min/week; range 0–5598), household activity (Median = 1158 min/week; range 0–15,678), and leisure-time activity (Median = 1485 min/week; range 0–15,678). Median values were reported in accordance with the IPAQ scoring protocol.

Analysis of continuous summary variables showed that the median total physical activity from walking was 46.2 MET-hours/week, with the lower quartile at 23.1 MET-hours/week and the upper quartile at 72.6 MET-hours/week. The median moderate-intensity physical activity was 28 MET-hours/week, with the lower quartile at 12 MET-hours/week and the upper quartile at 56 MET-hours/week. For vigorous-intensity physical activity, both the median and lower quartile were 0 MET-hours/week, while the upper quartile was 19.5 MET-hours/week.

The results of the IPAQ and EAT-26 are presented in Table 1.

Table 1. *Descriptive Analysis of IPAQ and EAT-26*

	Mean	SD	Min	Max	Percentiles		
					25th	50th Median	75th
Total Walk MET-min/week	3237.15	2333.14	.00	12474	1386	2772	4356
Totalmoderate-intensity PA MET-min/week	2325.69	2180.99	.00	13440	720	1680	3360
Total Vigorous-intensity PA MET-min/week	1024.90	2120.33	.00	17280	.00	.00	1170
Total MET PA WMV	6587.74	4792.34	.00	25440	3101.6	5616	8586

EAT26 - Diet	7.76	5.57	0	29	4.00	6.00	10.00
EAT26- Bulimia	1.91	2.76	0	16	.00	1.00	3.00
EAT26 – Oral control	3.57	3.44	0	16	1.00	3.00	5.00
EAT26 Total	13.24	7.97	1	54	7.00	12.00	17.00

The Kolmogorov–Smirnov test results ($p \leq 0.001$) indicated that physical activity scores in all domains were not normally distributed. Based on total physical activity levels from the IPAQ, participants were classified into three subgroups: 2.0% with low, 21.8% with moderate, and 76.2% with high physical activity.

Eating attitudes were assessed using the Eating Attitudes Test-26 (EAT-26), whose descriptive analysis is presented in Table 1. The Cronbach's alpha reliability analysis confirmed good internal consistency for two subscales: Dieting ($\alpha = 0.80$) and Bulimia ($\alpha = 0.71$), whereas the Oral Control subscale showed lower reliability ($\alpha = 0.57$), which is below the acceptable threshold.

Normality of the distribution for all three subscale scores and the total EAT-26 score was assessed using the Kolmogorov–Smirnov test, which indicated non-normal distribution. Therefore, non-parametric analysis was performed using the Friedman test, yielding $\chi^2 = 410.74$, $df = 2$, $p < 0.001$, and indicating a statistically significant difference among the three subscales.

Based on the total EAT-26 score, participants were stratified into two groups: at risk and not at risk for eating disorders. As shown in Table 2, 16.7% of participants were classified as at risk by the age of 20.5 years, compared with 83.3% who were not at risk.

Table 2. *Classification of Participants Based on IPAQ and EAT-26 Subscale Scores*

		Frequency	Percentage
IPAQ	Low physical activity group	8	2.0
	Moderate physical activity group	89	21.8
	3. High physical activity group	311	76.2
EAT - 26	No risk of eating disorder	340	83.3
	At risk of eating disorder	68	16.7

To examine the association between physical activity and the risk of eating disorders, the IPAQ test analysis demonstrated an unequal distribution favoring highly active female students. Overall physical activity was presented using stratified samples across the three EAT-26 subcategories—dieting, bulimia, and oral control—expressed through two outcome groups: individuals at risk and individuals not at risk for eating disorders, as shown in Table 3.

Table 3. *EAT-26 Test Outcome: Sample distribution by individuals with and without Risk of Eating Disorders*

	Total MET PA		
EAT26	**N**	**Mean**	**Std. Deviation**
0 - without risk of eating disorders	340	6645.5029	4858.05217
1 - with risk of eating disorders	68	6404.7426	5087.44221
Total	408	6605.3762	4891.45339

From the descriptive analysis, it was observed that, compared to the average total physical activity (PA), individuals at risk of eating disorders had slightly lower total PA values than those without risk. Further analysis using the Mann–Whitney U test ($Z = -0.681$, $p = 0.496$) indicated that there was no statistically significant difference in total PA between individuals at risk and those not at risk of eating disorders.

As an additional and final analysis, we examined the correlation between the EAT-26 subcategories—diet, bulimia, and oral control—and the total physical activity (PA) score from the IPAQ test.

Within the EAT-26, we found high statistical significance with moderate to strong correlations for each subcategory relative to the total EAT-26 score. However, no correlation or clinical significance was observed between high physical activity, represented by Total MET PA, and the EAT-26 subcategories (Table 4).

Table 4. *Correlation between IPAQ and EAT-26 tests*

			Total MET PA	EAT26 Diet	EAT26 Bulimia	EAT26 Oral control	EAT26 Total
Spearman's rho	Total MET PA	r.	1.000	.015	-.079	.005	-.028
		p	.	.755	.112	.924	.568
	EAT26 Diet	r	.015	1.000	.266**	.007	.717**
		p	.755	.	.000	.889	.000
	EAT26 Bulimija	r	-.079	.266**	1.000	.047	.519**
		p	.112	.000	.	.342	.000
	EAT26 Oral control	r	.005	.007	.047	1.000	.536**
		p	.924	.889	.342	.	.000

*Correlation coefficient (r) ** Correlation significance at the 0.01 level*

To fully examine the relationship between physical activity level and the risk of eating disorders, body composition was included as an additional independent variable. Using ROC analysis, we further examined the relationship between the dependent EAT-26 categories (individuals at risk and not at risk of eating disorders) and the independent categories of BMI, body fat, and visceral fat. Based on all examined body parameters (showing relatively low sensitivity and relatively low specificity), BMI, as well as the percentage of body and visceral fat alone, cannot serve as reliable indicators for detecting individuals at risk of eating disorders, as summarized in Table 4.

Table 5. *Distribution of Eating Disorder Risk Across BMI, Body Fat, and Visceral Fat Categories*

	EAT risk	EAT without risk
BMI 21.65	69.1%	45.6%
Body fat 33.15	57.4%	33.8%
Visceral fat 3.5	52.9%	35.3%

Finally, a multiple regression analysis was conducted including all mentioned parameters, body composition sub-scores, and EAT-26 sub-scores in relation to total MET physical activity.

Using a backward regression approach, BMI and MUSCULAR mass were identified as statistically significant predictors of total MET physical activity. Specifically, BMI showed a significant effect ($t = 2.466$; $p = 0.014$), while the effect of muscle mass was even stronger and highly statistically significant ($t = 3.334$; $p = 0.001$).

Discussion

The objective of this study was to examine whether a significant association exists between physical activity levels, body composition, and the risk of developing eating disorders. Previous evidence suggests that overeating and disordered eating behaviors are commonly associated with reduced physical activity. Young women often strive to achieve an ideal body composition and perceived physical attractiveness through two primary approaches: increasing physical activity or engaging in restrictive dietary behaviors, including dieting, fasting, or bulimic practices. Such compensatory behaviors, either excessive physical activity, prolonged sedentary habits, or restrictive dieting may contribute to the onset of non-communicable diseases and postural or musculoskeletal disorders later in life. Preventive strategies led by healthcare professionals can help modify misconceptions about the "ideal body" by promoting awareness among young women regarding the risks associated with eating disorders, the essential role of physical activity in overall health, and the limitations of relying solely on BMI as a standard indicator of physical status (Ispas, Forray, Lacurezeanu, Petreuș, Gavrilaș, & Chereches. 2025). Enhancing early recognition of harmful behaviors and encouraging timely medical support are critical components in reducing the prevalence and consequences of eating disorders.

Descriptive analysis of anthropometric characteristics and body composition parameters classified our participants as young women with a mean age of 20.5 ± 0.7 years, mean height of 168.65 ± 6.01 cm, and mean body mass of 63.09 ± 9.9 kg, corresponding to a normal BMI range (22.1 ± 3.2). A total of 46% of participants were positioned within the central percentile range of 60 to 68.18 kg. The mean BMI was 22.10, with 76.2% of the sample falling

within the normal BMI range (18.5–25). In terms of body composition, 57.84% of participants had a normal body fat percentage, while 96.32% presented with normal muscle mass distribution. When comparing BMI values to a study conducted among female students of similar age at the University of Sarajevo, which included 1,178 participants, the mean BMI reported was 21 (Kovačević et al., 2021). Comparable findings were observed in the study by Mašina (2019), where the average fat mass among 596 female participants of the same age was 30.36 ± 6.66%, with a distribution ranging from 12.8% to 54.1%. Muscle mass values in that study averaged 28.80 ± 3.35%, with a percentage range from 13% to 42%. In our study, a more detailed analysis indicates a slight variance in mean height across BMI categories. Students within the lowest BMI category demonstrated the greatest height and highest percentage of muscle mass. As BMI increased, muscle mass percentage consistently decreased, whereas body mass, subcutaneous fat, and visceral fat values showed a predictable progressive increase.

Physical activity contributes to the development of functional, morphological, motor, conative, and cognitive characteristics of the human body, exerting a systematic influence across biological, health, educational, economic, recreational, and creative domains of human functioning (Bajrić S., Srdić, Bajrić O., 2021; Ilić, Pang, Vlaški, Grujičić, & Novaković , 2022; Han, Li, Wang, Ke, Meng, Li & Tong, 2022).. Regular exercise improves quality of life, reduces emotional distress, and enhances the ability to cope with life stressors (Brundtland, 2002; Strain et al., 2024). These findings are widely documented in the scientific literature, with Guthold et al. (2018) being among the most frequently cited authors in this field.

Analysis of continuous variables related to walking, moderate, and vigorous physical activity confirmed that walking is the dominant form of daily physical activity among participants. The median value for walking activity was 2772 MET-min/week (IQR: 1386–4356 MET-min/week). Moderate physical activity demonstrated a median of 1680 MET-min/week (IQR: 720–3360 MET-min/week). Vigorous physical activity showed a median of 0 MET-min/week, with an upper quartile of 1170 MET-min/week. The total physical activity level reached a median of 5616 MET-min/week, which represents a high weekly physical activity level, consistent with the anthropometric profile of the sample. To highlight walking as the primary form of physical activity among female students of the University of Banja Luka, it is necessary to compare moderate and vigorous physical activity levels with those reported for university students in other European countries. As shown in Table 1 our participants exhibited the highest median value for moderate physical activity (1680 MET-min/week) when compared to female students from the Czech Republic, Poland, and Germany (all 720 MET-min/week), as well as students from the Netherlands (1200 MET-min/week). Conversely, vigorous physical activity was entirely absent in our sample, while the highest values were reported among students in the Czech Republic (4320 MET-min/week), followed by Germany (2880 MET-min/week), the Netherlands (2640 MET-min/week), and Poland (1440 MET-min/week) (Maciaszek et al., 2020). Countries with lower economic status have reported declines in physical activity among young individuals across multiple life domains (Strain et al., 2024), which is also evident in our context. However, there remains a lack of data regarding the health status and attitudes toward sports participation among the student population. Despite this, the present study showed a high level of physical activity: only 2% of the participants were categorized as physically inactive, 21.8% as moderately active, and 76.2% reported being highly active according to IPAQ scoring.This high level of activity may be partly attributed to socioeconomic factors, where limited access to transportation promotes walking as the primary mode of mobility among students. Our findings differ from a study conducted at the University of Kragujevac, which included both male and female students, reporting 23.3% physically inactive, 62.5% moderately active, and only 14.2% highly active students (Stojmenović & Milošević, 2017). Generally, participation in organized sports remains low, and maintaining physical appearance is more frequently achieved through caloric restriction and stress-related lifestyle adjustments associated with academic expectations. Alarmingly, only 5% of our participants reported engaging in any type of sport over the past five years. Thus, the high total physical activity score in our sample is primarily attributed to self-reported walking, with a median of 2772 MET-min/week (IQR: 1386–4356 MET-min/week). Potential contributing factors include limited financial resources, reduced availability of sports facilities, low awareness of the health benefits of physical activity, and limited engagement in sports among youth. Additionally, environmental and climatic conditions, characterized by a moderately continental climate with cold winters and warm summers may further promote walking, whereas cycling is not widely adopted as a common means of daily transportation.

Transitioning to university life can be a stressful period for young adults, and coping strategies may include changes in eating behaviors (Murtaj, Pireva, Mikić, 2023; Provost, 1989). Within this population, rapid increases in risky behav-

iors, altered health perceptions, and a subjective decline in well-being have been observed, resulting in disordered eating patterns (Pilipović-Spasojević et al., 2020). Eating disorders are characterized by unhealthy eating habits and/or behaviors related to eating and weight control (American Psychiatric Association, 2000), and are influenced by a combination of sociocultural, psychological, biological, and genetic factors that form the core of their etiology (Jaruga-Sękowska, Staśkiewicz-Bartecka & Woźniak-Holecka,2025). Psychosocial factors often involve pressure from close social networks, peers, and mass media, which contribute to dissatisfaction with body appearance (Brytek-Matera, 2021). Body dissatisfaction frequently drives individuals to initiate dieting, while excessive and restrictive eating patterns may lead to the development of eating disorders (Kosmas, Garza, Kells, Hahn, Davis, 2025; Eck, Quick & Byrd-Bredbenner, 2022).

In our study, the Eating Attitudes Test-26 (EAT-26) was used to assess the risk of eating disorders. Based on the total sample, 16.7% of participants were classified as being at risk for developing an eating disorder. The overall EAT-26 score demonstrated a mean of 12, with an interquartile range of 7 to 17 points. These values indicate a higher level of risk compared to the findings reported by Malaram et al. (2023). However, our results are consistent with those from a study conducted in Tuzla, where 16.3% of female university students were identified as being at risk for eating disorders (Ćosić-Mulahasanović et al., 2021).

Initially, we observed an uneven distribution favoring high levels of physical activity. Therefore, total physical activity was compared with the summary EAT-26 outcomes—participants classified as at risk versus those not at risk for eating disorders. Descriptive analysis indicated no statistically significant difference in physical activity levels between individuals at risk and those not at risk. Correlation analyses were conducted between EAT-26 subscales—Dieting, Bulimia, and Oral Control—and both the total EAT-26 score and total physical activity measured by the IPAQ. As expected, within the EAT-26 score, more frequent dieting behavior was associated with a higher risk of eating disorders, showing a statistically significant and strong correlation ($r = 0.71$, $p < 0.001$). The Bulimia and Oral Control subscales also showed good correlations with the total EAT-26 score ($r = 0.52$ and $r = 0.54$, respectively, $p < 0.001$). Due to the very similar levels of physical activity across all three EAT-26 subscales, we conclude that no significant association exists between physical activity and the risk of eating disorders, consistent with the findings of previous studies (Mroz, 2022; Fatih, 2025; Gonzaga, 2024; Alsaleha, 2025; Gunes, 2025). Additionally, we found that BMI was not correlated with eating disorder risk. However, as expected, a positive correlation was observed between higher percentages of muscle mass and visceral fat with higher levels of physical activity.

Conclusion

BMI and the percentage of muscle mass were identified as significant predictors of high levels of physical activity. In contrast, neither body composition nor high physical activity levels predicted the risk of eating disorders. In this sample, BMI was not a reliable indicator of eating disorder risk and therefore should not be considered an independent indicator of health status. Developing a comprehensive health profile that distinguishes individuals at risk for eating disorders (as a mental health component) from those defined by physical health components—where body composition reflects physiological/anthropometric characteristics and physical activity represents a health-related behavior—requires further research employing an expanded set of assessment tools. Developing a complete health profile that separates mental health risks, such as eating disorders, from physical health factors—where body composition reflects the body's structure and physical activity reflects healthy habits—requires further research using more comprehensive assessment tools.

Understanding the relationship between body composition, eating disorders, and physical activity levels is essential for designing effective strategies to promote and prevent psycho-physical health issues among young female students. Such efforts demand continuous evaluation and investigation of biopsychosocial factors influencing health outcomes.

Conflict of Interest

The authors declare no conflict of interest in the design, data collection, analysis, interpretation, or writing of this manuscript.

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