ANKARA MEDICAL JOURNAL

Research Article

Ankara Med J, 2025;(3):260-270 // 10.5505/amj.2025.51196

MENTAL HEALTH AMONG MEDICAL STUDENTS: AN EXAMINATION OF EATING ATTITUDES, BODY IMAGE, AND DEPRESSION

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Submitted: 26.05.2025 // Accepted: 29.08.2025

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Abstract

Objectives: This study aimed to investigate eating attitudes, body image perceptions, and depression levels among medical students, a population known to face considerable mental health challenges due to the rigorous nature of medical training.

Materials and Methods: A cross-sectional study was conducted with 359 students (205 females and 154 males) enrolled at Yozgat Bozok University's Faculty of Medicine. Participants completed self-report questionnaires assessing depressive symptoms, body image satisfaction, and eating behaviors. Sociodemographic data were also collected to explore potential risk factors.

Results: Depression levels were significantly higher among female students ($p<0.001$) and those originating from rural areas ($p<0.001$). A considerable proportion (42.9%) of students reported dissatisfaction with their physical appearance, and 55.4% stated that others' opinions influenced their body image. Furthermore, 79.9% indicated that their emotional states affected their eating behaviors. However, statistical analysis revealed no significant correlations between eating attitudes, body image perceptions, and depression scores.

Conclusion: Although no direct relationships were observed between eating attitudes, body image, and depression, the high prevalence of psychological distress and body dissatisfaction—particularly among female and rural-background students—highlights the need for targeted mental health interventions. Addressing these issues within medical education may help enhance students' psychological resilience and well-being, ultimately benefiting their future clinical practice.

Keywords: Eating attitudes, body image dissatisfaction, depression, medical students, mental health

Introduction

The number of individuals with inadequate and unbalanced nutrition is steadily increasing. Numerous studies indicate that university students often exhibit negative eating behaviors or attitudes, such as skipping meals and consuming fast food. [1,2] Changes in eating habits encountered during this period are thought to potentially have adverse effects on students' post-graduation lives. Negative eating behaviors and attitudes have been shown to lead to distorted body image perceptions and depressive symptoms. [1,3]

Medical school is one of the most demanding and challenging academic fields due to its heavy theoretical workload, difficult working conditions, rigorous examinations, and intense working hours. [4] Consequently, medical students are at a higher risk of developing negative eating behaviors and experiencing related physiological or psychological issues. [5]

While negative eating behaviors are common among university students in general, medical students are believed to be more vulnerable to these issues due to the intense stress they experience during their education. [6] However, research specifically focusing on eating behaviors, body image, and mental health among medical students remains limited.

Therefore, this study aims to evaluate eating attitudes, body image, depression, and associated factors in medical students, a high-risk group. Such research is crucial for understanding the unique challenges faced by medical students and for informing potential interventions to address these issues.

Materials and Methods

The population of the study is students studying at Yozgat Bozok University Faculty of Medicine. The sample of the study consisted of a total of 359 volunteer university students, 205 women, and 154 men.

Sociodemographic questionnaire, Eating Attitude Test (EAT), Body Image Scale (VAS), and Beck Depression Inventory (BDI) were used as data collection tools.

Eating Attitude Test (EAT): It was developed by Garner and Garfinkel (1979) [7] as a self-assessment scale to measure the symptoms of anorexia nervosa and was adapted into Turkish by Savaşir and Erol (1989). [8]

EAT has been adapted to Turkish, and validity/reliability studies have been conducted; it has been frequently used on university students and various demographic groups. Studies show that EAT is an important tool in the early diagnosis of eating disorders and psychological evaluations. [9]

Body Image Scale (BIS): It was developed by Secord and Jourard (1953) to measure individuals' satisfaction with body parts and functions. The Turkish adaptation of BIS was made by Hovardaoğlu (1992), and the Cronbach Alpha coefficient of the scale was determined as 0.91. This scale consists of a total of 40 questions in a 5-point Likert-type scale about various parts and functions of the body (I don't like it at all = 1, I don't like it = 2, I'm undecided = 3, I like it = 4, and I like it very much = 5). The lowest score can be 40, and the highest score can be 200 from the answers given to these questions. [10]An increase in the score indicates that individuals' body satisfaction increases, and a decrease in the score indicates that satisfaction decreases. [10,11]

Beck Depression Inventory (BDI): It is a self-rating scale widely used to measure symptoms of depression. This inventory, first developed by Aaron T. Beck in 1961, is used to determine individuals' depression levels. BDI is a 21-item inventory, and each item assesses various symptoms of depression (e.g., sadness, hopelessness, loss of self-esteem). Each item is rated from 0 to 3, and the total score indicates the individual's level of depression. [12]

In conclusion, BDI is widely used as a reliable and valid tool for assessing symptoms of depression and provides important data in various psychological studies.

Sample Size Calculation

The required sample size for this study was determined using GPower version 3.1 [13]. Assuming a medium effect size (Cohen's $f^2 = 0.15$), an alpha level of 0.05, and a desired statistical power of 0.80 for multiple regression analysis with up to five predictors, the minimum sample size required was calculated as 92 participants. Our final sample of 359 students exceeded this threshold, ensuring adequate power to detect medium or larger effect sizes.

Statistical Analysis

IBM SPSS Statistics version 22.0 was used to analyze the data. Descriptive data were shown as mean ± standard deviation for continuous variables and as numbers and percentages for categorical variables. Chi-square test was used to analyze categorical variables. A value of $p<0.05$ was considered statistically significant.

Results

The average age of medical school students participating in the study was 22.6 years. 205 (57.1%) students were female, and 357 (99.4%) were single. 338 (94.2%) people lived in the city. The income level of 78% was medium, and 17% was low. 83.6% of the students were not working in any additional job.

27.3% of the students had a history of psychological illness. 18.4% people were currently on a diet. The rate of those who had a history of plastic surgery before was 8.4%, and the rate of those considering having plastic surgery was quite high at 38.4%. 42.9% of the students did not like their bodies aesthetically.

55.4% of the students stated that other people's opinions affect their attitudes towards themselves. 79.9% stated that their emotional state affected the act of eating. 20.1% of the students were doing sports regularly (Table 1).

Table 1. Demographic Characteristics of the Research Participants

Characteristic	
Age (Years)	22.6±1.6
Gender	
Male	154 (42.9%)
Woman	205 (57.1%)
Marital Status	
Married	2 (0.6%)
Single	357 (99.4%)
Living Space	
Village	5 (1.4%)
Town	16 (4.5%)
City	338 (94.2%)
Income Rate	
Low	61 (17.0%)
Middle	280 (78.0%)
High	18 (5.0%)
Working Status	
Working	59 (16.4%)
Not Working	300 (83.6%)
Psychosocial, Aesthetic, and Lifestyle Variables	
History Of Previous Psychological İllness	98 (27.3%)
Currently On A Diet	66 (18.4%)
History Of Previous Plastic Surgery	30 (8.4%)
Considering Plastic Surgery	138 (38.4%)
Satisfied With Body Aesthetics	205 (57.1%)
Other People's Opinions Affect Attitudes Towards	199 (55.4%)
Emotions Affect Eating	287 (79.9%)
Doing Sports Regularly	72 (20.1%)

According to BDI results, 27% of medical school students had moderate mood disorders. 7.5% had clinical depression, 11.7% had moderate depression, 4.5% had severe depression, and 0.3% had major depression. Currently, 24% of the students have depression (Table 2).

Table 2. Beck Depression Inventory Results of the Study Participants

Beck Depression Inventory	**n**	**%**
Normal	176	49.0
Moderate Mood Disorder	97	27.0
Clinical Depression	27	7.5
Moderate Depression	42	11.7
Severe Depression	16	4.5
Major Depression	1	0.3
Total	**359**	**100.0**

BDI scores were found to be statistically significantly higher in female students ($p<0.001$). No relationship was found between marital status, income status, and employment status and BDI scores. However, the BDI score of people living in villages was found to be statistically significantly higher compared to those living in cities ($p<0.001$) (Table 3).

Table 3. Relationship between Beck Depression Inventory Scores and Demographic Data

BDI Scores			
	n (%)	**Mean ± SD**	***p***
Gender			
Male	154 (42.9%)	8.6±5.8	<0.001
Woman	205 (57.1%)	14.9±9.1	
Marital Status			
Married	2 (0.6%)	24.0±0.0	0.050
Single	357 (99.4%)	12.1±8.4	
Living Space			
Village	5 (1.4%)	35.2±6.8	
Town	16 (4.5%)	9.9±5.1	<0.001
City	338 (94.2%)	12.0±8.1	
Income Rate			
Low	61 (17.0%)	11.8±6.5	
Middle	280 (78.0%)	12.2±8.9	0.614
High	18 (5.0%)	14.0±6.4	
Working Status			
Working	59 (16.4%)	14.3±11.7	0.038
Not Working	300 (83.6%)	11.8±7.6	

No relationship was found between EAT scores and gender, marital status, place of living, income levels, or employment status. No statistically significant relationship was found between EAT scores and depression status (Table 4).

Table 4. Relationship Between Eating Attitude Test Scores and Demographic Data

EAT Scores			
	n (%)	**Mean ± SD**	***p***
Gender			
Male	154 (42.9%)	129.7±35.3	0.917
Woman	205 (57.1%)	129.3±28.1	
Marital Status			
Married	2 (0.6%)	129.0±0.0	0.982
Single	357 (99.4%)	129.5±31.5	
Living Space			
Village	5 (1.4%)	136.8±4.9	0.237
Town	16 (4.5%)	117.0±41.9	
City	338 (94.2%)	129.9±31.0	
Income Rate			
Low	61 (17.0%)	135.7±30.7	0.062
Middle	280 (78.0%)	128.9±31.5	
High	18 (5.0%)	116.5±28.9	
Working Status			
Working	59 (16.4%)	119.5±33.9	0.007
Not Working	300 (83.6%)	131.4±30.5	
Depression State			
None	273 (76.1%)	132.0±31.5	0.005
There İs	86 (23.9%)	121.3±31.3	

Body Image Scale (BIS) scores did not show a statistically significant relationship with any of the examined demographic variables (gender, marital status, place of residence, income level, and employment status), nor with the presence of depression or eating attitudes (Table 5).

Table 5. Relationship of Body Image Scale (BIS) scores with Demographic Characteristics, Depression, and Eating Attitudes

BDI Scores			
Variable	**n (%)**	**Mean ± SD**	**p**
Gender			
Male	154 (42.9%)	108.4±31.5	0.396
Woman	205 (57.1%)	105.5±30.9	0.396
Marital Status			
Married	2 (0.6%)	66.5±26.1	0.067
Single	357 (99.4%)	107.0±31.1	0.067
Living Space			
Village	5 (1.4%)	98.5±17.5	0.689
Town	16 (4.5%)	109.5±25.4	0.689
City	338 (94.2%)	106.8±31.6	0.689
Income Rate			
Low	61 (17.0%)	108.3±30.6	0.434
Middle	280 (78.0%)	107.0±31.5	0.434
High	18 (5.0%)	98.727.3	0.434
Working Status			
Working	59 (16.4%)	112.4±27.4	0.126
Not Working	300 (83.6%)	105.6±31.8	0.126
Depression State		106.5±31.9	
None	273 (76.1%)	106.6±31.9	0.868
There Is	86 (23.9%)	107.2±28.9	0.868
Beck Depression Inventory and EAT Scores			
	BIS	**n (%)**	**Mean ± SD**
BDI Scores	High (≥135)	67 (18.7%)	11.9±8.0
BDI Scores	Low (<135)	292 (81.3%)	12.3±8.6
EAT Scores	High (≥135)	67 (18.7%)	131.1±31.5
EAT Scores	Low (<135)	292 (81.3%)	129.1±31.4

Discussion

This study assessed eating attitudes, body image, and depression levels among medical students, exploring potential relationships between these factors. Our findings revealed significantly higher depression levels in female students and those from rural areas. However, no meaningful associations were detected between eating attitudes, body image, and depression levels. Although the absence of significant associations between eating attitudes, body image, and depression contradicts much of the existing literature [4,14,15], several factors may explain this finding. First, the homogeneity of our sample drawn from a single medical faculty may have reduced variability in socioeconomic and cultural backgrounds, limiting the detection of associations.[16] Second, social desirability bias may have influenced self-reported measures, particularly on sensitive topics such as

body image and eating behaviour. [17] Third, medical students' heightened health awareness could have mitigated the severity or reporting of disordered eating attitudes, thereby weakening correlations with depressive symptoms. [6] Lastly, the cross-sectional design precludes any causal inference, and the temporal relationship between these variables may require longitudinal investigation to be fully understood. These findings warrant further analysis in the context of the existing literature to better understand the underlying dynamics.

Consistent with previous research, female students exhibited significantly higher depression scores than their male counterparts (p<0.001). Studies by Liao et al. (2010) and Abed et al. (2015) similarly demonstrated that women are more vulnerable to the psychological pressures associated with medical education, reporting elevated risks of both depression and eating disorders. [18-20] This increased susceptibility may stem from gender-related societal expectations, differences in coping mechanisms, and the cumulative stress of academic and social responsibilities.

The elevated depression scores observed in students from rural areas (p<0.001) align with findings from previous research, including studies by Bayram et al. (2008) and Lian et al. (2023). [16,21] These studies highlighted the heightened vulnerability of rural-origin students to depression, often attributed to factors such as social isolation, limited access to academic resources, geographic dislocation, and cultural adaptation challenges. Rural students may face additional psychological burdens stemming from reduced support networks, socioeconomic disparities, and the stress of transitioning to urban academic environments.

Interestingly, no significant associations were identified between Eating Attitudes Test (EAT) scores and gender, income level, or depression levels in our study. This contrasts with findings from Jahrami et al. (2024), who reported a heightened prevalence of eating disorders among medical students. [5,22] The absence of such a relationship in our sample could stem from several factors. Participants may have provided socially desirable responses, especially on sensitive topics like eating behaviors. Additionally, the study's limited scope, restricted to a single university, may have introduced homogeneity in socioeconomic and cultural characteristics. Furthermore, medical students' heightened awareness of health-related behaviors might influence their eating habits, potentially mitigating risks associated with disordered eating.

Body image scores showed no significant association with gender, income level, or depression. However, 42.9% of participants expressed dissatisfaction with their physical appearance, and 55.4% reported being influenced by others' opinions. While literature often links body image dissatisfaction with depression and eating disorders (Mohamed et al., 2023; Manaf et al., 2016), this relationship might not have emerged in our study due to cultural differences, sample homogeneity, or medical students' health awareness. [14,15] Social desirability

bias may have also influenced responses. Further research with diverse samples and qualitative methods is needed for deeper insight.

Our findings underscore the high prevalence of depression among medical students, with female students and those from rural backgrounds identified as particularly vulnerable groups. These results emphasize the urgent need for effective student support programs within medical education. Initiatives aimed at developing stress management skills, enhancing emotional resilience, and providing targeted interventions for high-risk groups could play a crucial role in mitigating these challenges.The inconclusive results regarding eating attitudes and body image suggest a need for further investigation. Future studies should consider the influence of cultural factors, academic stress, and institutional differences on these variables to provide more nuanced insights.

Various programs and support mechanisms can be developed to improve the body image and eating attitudes of students who are under intense stress and pressure during medical education. Such studies highlight the importance of interventions and counseling services necessary to support the mental health of medical students. The mental health of current medical students is indicative of the mental health of future doctors. Therefore, depression and eating disorders seen in medical school students deserve attention and require the implementation of public health policies.

This study has several limitations that should be acknowledged. First, the sample was restricted to a single university, which limits the generalizability of the findings. Second, the reliance on self-reported data may have introduced social desirability bias. Lastly, the cross-sectional design prevents any conclusions about causal relationships between the studied variables.

Future studies should employ larger, multi-center, and longitudinal designs to better understand the interplay between eating attitudes, body image, and depression among medical students. The effects of socioeconomic factors, cultural influences, and academic pressure warrant more detailed examination. Universities should prioritize implementing structured mental health support programs, with tailored interventions for female students and those from rural backgrounds to address their unique challenges effectively.

Ethical Considerations: The ethics committee file of this study was approved by the local Clinical Research Ethics Committee (approval number: 2017-KAEK-189_2023.04.14_4)

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

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