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Comparing Level of Happiness and Depression Between Turkish and International Medical Students

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ABSTRACT

This cross-sectional study was aimed to compare happiness and depression levels among group Turkish and international medical students in Istanbul, Türkiye. Data were collected through an online survey that included demographic inquiries, the Oxford Happiness Scale, and Beck's Depression Inventory II. Significant contrasts emerged in demographic and lifestyle factors between Turkish and international students**.** Turkish medical students displayed a higher prevalence of unhappiness, although this difference was not statistically significant (66.3% for Turkish students vs. 59.1% for international students; χ^2=2.472, p=0.116). Conversely, no marked differences were observed in the severity of depression between the two groups (χ^2=0.028, p=0.986). Conversely, no marked differences were observed in the severity of depression between the two groups (χ2=0.028, p=0.986). Logistic regression analyses revealed noteworthy associations. Factors such as age, academic phase, family history of psychiatric illness, and prior psychiatry treatment were linked to heightened odds of experiencing unhappiness among students. Similarly, sig-

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nificant predictors of depression included a family history of depression and prior psychiatry treatment. However; gender, age, relationship status, accommodation, alcohol consumption, smoking habits, and repeated academic years did not exhibit significant associations with unhappiness among the sampled medical students. While the models demonstrated modest explanatory power, these findings emphasize the urgent need to address mental health issues among medical students. Tailored interventions targeting specific vulnerable subgroups are crucial and further research is needed to identify additional factors contributing to psychological distress in this demographic.
Keywords: Depression, Happiness, Medical Students

INTRODUCTION

In the realm of medical education, the psychological well-being of medical students has emerged as a focal point of concern globally. Despite their initial enthusiasm for their medical careers, medical students have been found to experience a decline in life satisfaction due to academic pressures, ethical dilemmas, and personal sacrifices (Tjia et al., 2005). The perception of medical students and doctors as 'invincible' has caused decreased levels of help-seeking for psychiatric problems and increased the risk of experiencing symptoms of depression, anxiety, and burnout, indicating a collective vulnerability to psychological distress (Hankir et al., 2014). These factors lead many medical students to cease their educational pursuits or turn to destructive habits throughout their education.

Depression among medical students has been a topic neglected in Türkiye, even more so with regard to international medical students. International medical students face the same challenges as their Turkish counterparts with added stressors in the form of cultural changes. International students often face language barriers, social adjustment, loneliness, and isolation while studying abroad and the pursuit of medicine only exacerbates these feelings (Sümer et al., 2008). These intense feelings of isolation and hopelessness can quickly manifest as depression, further alienating these students from medical education (Mori, 2011).

In the past decade, Türkiye has experienced significant growth in its international medical student population, largely due to the expansion of programs

offering medical education in English. Despite this rapid rise in the international student population, insufficient research has been conducted to examine the mental health of international students, especially those in medicine. When considering the demands of medical education alongside the experience of being an international student, it raises the question of whether international medical students face a heightened risk of unhappiness and depression compared to their domestic counterparts. This study aims to investigate and shed light on this proposed hypothesis within the context of medical education.

METHODOLOGY

Study Design

This is a descriptive study designed to demonstrate and compare levels of happiness and depression among medical students in Istanbul, Türkiye, specifically focusing on the disparity between Turkish and international medical students. The study adhered to ethical guidelines and was conducted during April 2024 at Istanbul Medipol University and Istanbul Medipol University Mega Hospital Complex.

Population and Sample Size

The study population consisted of medical students enrolled at Istanbul Medipol University, totaling 1,880 individuals, including 1,476 Turkish students and 404 international students. Efforts were made to reach all students; however, due to various constraints, the final sample included 249 Turkish students (16.9%) and 208 international students (51.5%), who participated voluntarily.

Data Collection

Data were collected through an online survey distributed to participants. The purpose of the study was to compare levels of happiness and depression between medical students from Türkiye and international medical students by using the Oxford Happiness Scale and Beck's Depression Inventory. These scales do not provide a clinical diagnosis for depression but allow for self-assessment and can be used to ascertain further follow-up.

The students were given a survey consisting of 61 questions and students provided verbal consent prior to completion. Eleven of the questions were related subject's demographic characteristics, 29 questions were the Oxford Happiness Scale questionnaire and were used to assess the level of happiness of the participants, and 21 questions were the Beck's Depression Inventory II (BDI-II) questionnaire to assess the subject's mental health and depression. The surveys were given in both English and Turkish with the Turkish forms of the Oxford Happiness Index (Doğan & Çötok, 2011) and Beck's Depression Inventory (Kapci et al., 2008). The demographic characteristics surveyed included: age, sex, year in medical school, repeated years in medical school, romantic relationship status, accommodation, consumption of alcoholic beverages, smoking habits, family history of depression, and prior psychiatric treatment. Accommodation was specifically categorized based on responses to the statements: "I live at home with my family," "I live in a student dormitory," "I live with other students in an apartment," and "I live in an apartment alone."

Interpretation of Results

The scores on the Oxford Happiness Scale were classified into ≤4 "unhappiness" and >4 "happiness" to clearly distinguish between lower and higher levels of happiness. Beck's Depression Inventory scores were categorized as follows: 0–10 points "not depressed", 11–17 points "moderately depressed", and 18–63 points "clinically relevant depression" (Beck et al., 1996). The distribution of happiness and depression statuses were interpreted based on demographic and background characteristics.

Statistical Analysis

Data analysis was conducted using IBM SPSS Statistics 23 (Statistical Package for Social Sciences). Descriptive statistics were used to summarize participant characteristics. Chi-square test was performed to assess the relationship between the demographic characteristics and level of happiness and depression.

Ethical Considerations

Ethical approval for the study was obtained from the Clinical Research Ethics Committee of Istanbul Medipol University (decision number 385 received

on 26.04.2024) and the deaneries of the Turkish Medicine department and International School of Medicine. Participant confidentiality and anonymity were ensured throughout the study, and informed consent was obtained from all participants prior to their involvement. All participants, regardless of their results, were educated on the importance of mental health and were encouraged to consult a health professional for further support and guidance.

RESULTS

Significant differences were observed in several demographic and lifestyle characteristics between the Turkish and international medical school participants (Table 1). Turkish medical school participants exhibited a lower proportion of females compared to international medical students (55.0% vs. 65.4%, p=0.024). Additionally, a greater percentage of international participants were ≤20 years old (45.2% vs. 30.9%, p<0.001) and were in the pre-clinical years of medical school (73.1% vs. 61.8%, p=0.011). Moreover, a larger proportion of international medical students reported repeating a year in medical school (27.4% vs. 10.4%, p<0.001). Significant differences were also observed in romantic relationship status (p=0.004), accommodation (p<0.001), alcohol consumption (p<0.001), and smoking habits (p=0.002) between Turkish and international medical students. However, no significant disparities were found in family history of depression (p=0.595) or prior psychiatry treatment (p=0.125) between the two groups.

Table 1: Impact of demographic characteristics on unhappiness and depression among medical students (Istanbul-Türkiye, 2024)

		Characteristics of Students					
		Turkish		International			
		n	%	n	%	X^2	p
Sex	Male	112	45.0	72	34.6	5.06	0.024
	Female	137	55.0	136	65.4		
Age	≤20	77	30.9	94	45.2	15.74	**<0.001**
	21-22	80	32.1	70	33.7		
	≥23	92	36.9	44	21.2		
Period in Medical School	Pre-Clinic	154	61.8	152	73.1	6.46	0.011
	Clinic	95	38.2	56	26.9		
Repeat Year in Medical School	Yes	26	10.4	57	27.4	21.94	**<0.001**
	No	223	89.6	151	72.6		
Romantic Relationship Status	Yes	92	36.9	51	24.5	8.14	0.004
	No	157	63.1	157	75.5		
Accommodation	Family	94	37.8	67	32.2	18.34	**<0.001**
	Dormitory	74	29.7	35	16.8		
	Apartment	31	12.4	39	18.8		
	Alone	50	20.1	67	32.2		
Alcohol	Yes	137	55.0	44	21.2	54.34	**<0.001**
	No	112	45.0	164	78.8		
Smoking	Never	144	57.8	153	73.6	12.54	0.002
	Occasionally	53	21.3	30	14.4		
	Daily	52	20.9	25	12.0		
Family History of Depression	Yes	50	20.1	46	22.1	0.28	0.595
	No	199	79.9	162	77.9		
Prior Psychiatric Treatment	Yes	81	32.5	54	26.0	2.35	0.125
	No	168	67.5	154	74.0		

The comparison of results from the Oxford Happiness Scale and Beck's Depression Inventory between Turkish and international medical students revealed notable differences in reported levels of happiness and depression severity (Table 4). Turkish medical students exhibited a higher proportion reporting unhappiness on the Oxford Happiness Scale compared to international students (66.3% vs. 59.1%), although this difference was not statistically significant ($\chi2=2.472$, $p=0.116$). Additionally, there were no significant differences in the distribution of depression severity levels between Turkish and international students according to Beck's Depression Inventory ($\chi2=0.028$, $p=0.986$).

Table 2: Distribution of Oxford Happiness Scale and Beck's Depression Inventory Scores by nationality of the participants (Istanbul-Türkiye, 2024)

	Oxford Happiness Scale				Beck's Depression Inventory					
	Unhappy		Happy		None		Moderate		Clinical	
	n	%	n	%	n	%	n	%	n	%
Turkish Medical Students	165	66.3	84	33.7	90	36.1	70	28.1	89	35.7
International Medical Students	123	59.1	85	40.9	76	36.5	57	27.4	75	36.1
	$X^2=2.472$ p=0.116				$X^2=0.028$ p=0.986					

Analysis of the Oxford Happiness Scale findings and their association with various demographic and lifestyle factors revealed that alcoholic beverages consumption ($\chi2=4.69$, $p=0.030$), family history of depression ($\chi2=13.60$, $p<0.001$), and prior psychiatry treatment ($\chi2=11.44$, $p<0.001$) emerged as significant predictors (Table 2). However, sex, age, academic progression, smoking habits, and accommodation did not significantly associate with happiness levels. Regarding the results of Beck's Depression Inventory, gender ($\chi2=0.27$, $p=0.875$), age ($\chi2=4.83$, $p=0.305$), and characteristics of students ($\chi2=0.03$, $p=0.986$) showed no significant associations with depression severity (Table 3). However, significant associations were observed for repeated year in medical school ($\chi2=7.20$, $p=0.027$), smoking habits ($\chi2=14.01$, $p=0.007$), family history of depression ($\chi2=22.13$, $p<0.001$), and prior psychiatry treatment ($\chi2=28.66$, $p<0.001$). Notably, students with a family history of depression, and those who had received prior psychiatry treatment, exhibited higher rates of clinically relevant depression.

Table 3: Distribution of Oxford Happiness Scale results by some characteristics of the participants (Istanbul-Türkiye, 2024)

		Oxford Happiness Scale					
		Unhappy		Happy			
		n	%	n	%	X^2	p
Gender	Male	119	64.7	65	35.3	0.36	0.548
	Female	169	61.9	104	38.1		
Age	≤20	105	61.4	66	38.6	1.79	0.407
	21-22	91	60.7	59	39.3		
	≥23	92	67.6	44	32.4		
Characteristics of Students	Turkish	165	66.3	84	33.7	2.47	0.116
	International	123	59.1	85	40.9		
Year in Medical School	Pre-Clinic	199	65.0	107	35.0	1.61	0.204
	Clinic	89	58.9	62	41.1		
Repeated Year in Medical School	Yes	57	68.7	26	31.3	1.39	0.238
	No	231	61.8	143	38.2		
Romantic Relationship Status	In a Relationship	93	65.0	50	35.0	0.36	0.547
	Single	195	62.1	119	37.9		
Accommodation	Family	109	67.7	52	32.3	6.55	0.088
	Dormitory	73	67.0	36	33.0		
	Other Students	43	61.4	27	38.6		
	Alone	63	53.8	54	46.2		
Alcohol	Yes	125	69.1	56	30.9	4.69	0.030
	No	163	59.1	113	40.9		
Smoking	Never	184	62.0	113	38.0	3.05	0.218
	Occasionally	49	59.0	34	41.0		
	Daily	55	71.4	22	28.6		
Family History of Depression	Present	76	79.2	20	20.8	13.60	**<0.001**
	Absent	212	58.7	149	41.3		
Prior Psychiatry Treatment	Present	101	74.8	34	25.2	11.44	**<0.001**
	Absent	187	58.1	135	41.9		

Table 4: Distribution of Beck's Depression Index Inventory results by some characteristic of the participants (Istanbul-Türkiye, 2024)

		Beck's Depression Inventory							
		None		Moderate		Clinical			
		n	%	n	%	n	%	X^2	p
Gender	Male	69	37.5	49	26.6	66	35.9	0.27	0.875
	Female	97	35.5	78	28.6	98	35.9		
Age	≤20	70	40.9	46	26.9	55	32.2	4.83	0.305
	21-22	53	35.3	37	24.7	60	40.0		
	≥23	43	31.6	44	32.4	49	36.0		
Characteristics of Students	Turkish	90	36.1	70	28.1	89	35.7	0.03	0.986
	International	76	36.5	57	27.4	75	36.1		
Year in Medical School	Pre-Clinic	112	36.6	76	24.8	118	38.6	4.77	0.092
	Clinic	54	35.8	51	33.8	46	30.5		
Repeated Year in Medical School	Yes	22	26.5	21	25.3	40	48.2	7.20	0.027
	No	144	38.5	106	28.3	124	33.2		
Romantic Relationship Status	Relationship	44	30.8	44	30.8	55	38.5	2.82	0.244
	Single	122	38.9	83	26.4	109	34.7		
Accommodation	Family	53	32.9	52	32.3	56	34.8	4.53	0.605
	Dormitory	37	33.9	31	28.4	41	37.6		
	With Other Students	27	38.6	18	25.7	25	35.7		
	Alone	49	41.9	26	22.2	42	35.9		
Alcohol	Yes	55	30.4	54	29.8	72	39.8	4.62	0.099
	No	111	40.2	73	26.4	92	33.3		
Smoking	Never	125	42.1	72	24.2	100	33.7	14.01	0.007
	Occasionally	24	28.9	29	34.9	30	36.1		
	Daily	17	22.1	26	33.8	34	44.2		
Family History of Depression	Present	19	19.8	24	25.0	53	55.2	22.13	**<0.001**
	Absent	147	40.7	103	28.5	111	30.7		
Prior Psychiatry Treatment	Present	24	17.8	50	37.0	61	45.2	28.66	**<0.001**
	Absent	142	44.1	77	23.9	103	32.0		

Post-hoc analysis revealed significant deviations from expected cell frequencies among different levels of smoking frequency, with never smokers showing a higher-than-expected count of not depressed individuals (adjusted residual=3.5, p=0.00048) and daily smokers displaying a lower count of not depressed individuals compared to expected values (adjusted residual=-2.9, p=0.0044). Additionally, individuals with a family history of depression demonstrated a significantly higher prevalence of clinically relevant depression (adjusted residual=4.4, p<0.001) and a lower prevalence of not being depressed (adjusted residual=3.8, p<0.001), while those without such history showed the opposite pattern (adjusted residual=3.8, p<0.001 for not depressed; adjusted residual=-4.4, p<0.001 for clinically relevant depression). Moreover, there was a significant association between prior psychiatric treatment and the severity of depressive symptoms, with treated individuals displaying lower adjusted residuals for not depressed scores (-5.3, p<0.001) and higher residuals for mild to moderate (2.9, p=0.004) and clinically relevant depression scores (2.7, p=0.007) compared to untreated individuals, who exhibited the opposite pattern.

The impact of demographic characteristics, regardless of whether students were Turkish or international, on unhappiness and depression among medical students was examined (Table 5). Students aged 23 years and above, belonging to the clinic phase of their medical education, and those with a family history of psychiatric illness exhibited increased odds of experiencing unhappiness, as evidenced by statistically significant estimates and odds ratios (ORs) of 2.38 (CI: 1.09-5.20, p=0.030), 2.34 (CI: 1.22-4.49, p=0.010), and 2.17 (CI: 1.23-3.84, p=0.008), respectively. Additionally, individuals reporting prior psychiatry treatment displayed elevated odds of unhappiness (OR=1.74, CI: 1.07-2.84, p=0.026). Conversely, residing alone was associated with decreased odds of unhappiness (OR=0.53, CI: 0.31-0.90, p=0.018). Notably, factors such as gender, age, relationship status, accommodation, alcohol consumption, smoking habits, and repeated academic years did not exhibit statistically significant associations with unhappiness among the sampled medical students. The fit of the model was moderate, with a McFadden pseudo-R^2 value of 0.072, indicating that about 7.2% of the variability in unhappiness could be explained by the variables considered. Regarding depression, significant asso-

ciations were found with family history of depression (OR=2.10, 95% CI: 1.32-3.33, p=0.002) and prior psychiatry treatment (OR=1.87, 95% CI: 1.25-2.79, p=0.002), indicating increased vulnerability in medical students with such backgrounds (Table 5). The model's explanatory power was relatively low, with a McFadden pseudo-R^2 value of 0.0475, indicating that approximately 4.75% of the variance in depression among medical students could be accounted for by the variables examined.

Table 5: Impact of demographic characteristics on unhappiness and depression among medical students (Istanbul-Türkiye, 2024)

	Unhappiness		Depression	
Characteristics	**OR (95% CI)**	**p**	**OR (95% CI)**	**p**
Gender				
Female	1.00		1.00	
Male	1.26 (0.83-1.93)	0.276	1.07 (0.74-1.55)	0.705
Age				
≤20	1.00		1.00	
21-22	1.17 (0.70-1.98)	0.547	1.36 (0.86-2.14)	0.190
≥23	2.38 (1.09-5.20)	**0.030**	1.59 (0.82-3.09)	0.167
Nationality				
International Medical Students	1.00		1.00	
Turkish Medical Students	1.05 (0.66-1.67)	0.824	0.86 (0.57-1.28)	0.455
Year in Medical School				
Clinic	1.00		1.00	
Pre-Clinic	2.34 (1.22-4.49)	**0.010**	1.54 (0.89-2.68)	0.125
Repeated Years				
No	1.00		1.00	
Yes	1.10 (0.61-2.00)	0.743	1.35 (0.81-2.24)	0.246
Relationship Status				
Single	1.00		1.00	
In a Relationship	0.90 (0.56-1.43)	0.648	0.98 (0.66-1.47)	0.936

	Unhappiness		Depression	
Characteristics	**OR (95% CI)**	**p**	**OR (95% CI)**	**p**
Accommodation				
Family	1.00		1.00	
Dormitory	0.88 (0.50-1.55)	0.661	1.05 (0.65-1.71)	0.838
Other Students	0.73 (0.39-1.37)	0.331	0.83 (0.48-1.43)	0.502
Alone	0.53 (0.31-0.90)	**0.018**	0.79 (0.50-1.25)	0.311
Alcohol				
No	1.00		1.00	
Yes	1.65 (0.96-2.81)	0.068	1.18 (0.75-1.85)	0.475
Smoking				
Never	1.00		1.00	
Occasionally	0.63 (0.35-1.14)	0.128	1.27 (0.77-2.09)	0.354
Daily	1.00 (0.51-1.96)	0.989	1.49 (0.85-2.60)	0.167
Family History				
Absent	1.00		1.00	
Present	2.17 (1.23-3.84)	**0.008**	2.10 (1.32-3.33)	0.002
Prior Psychiatry Treatment				
Absent	1.00		1.00	
Present	1.74 (1.07-2.84)	**0.026**	1.87 (1.25-2.79)	0.002

DISCUSSION

This study aimed to investigate and compare levels of happiness and depression among medical students in Istanbul, Türkiye, with a specific focus on the disparity between Turkish and international medical students. The results of our study showed that Turkish medical students felt less happiness than their international counterparts (33.7% vs. 40.9%). Despite this, results showed that both groups felt less happiness than reported in other research. In a study by Kamthan et al. (2019), 60.8% of the medical students in the study reported feelings of happiness. In another study among medical students in Saudi Arabia, 45.6% of students reported feelings of happiness, which is also higher than the perceived happiness in our study (Moghadam et al., 2016). Although no

research examining the levels of happiness among medical students in Türkiye has been conducted, studies on the happiness of other Turkish students were found. In the studies by Doğan and Sapmaz (2012), and Demirbatir (2015), the Turkish students had higher levels of happiness than both the Turkish medical students and international medical students in our study. The increased unhappiness in our students could be due to the stressors of medical school. In a study by Pelzer et al. (2022), the factors of mental overload and performance pressure among medical students explained the higher levels of unhappiness compared to non-medical students However, more research should be conducted in Türkiye to get a clearer answer.

The prevalence of moderate or clinical depression between Turkish and international medical students was similar (63.8% vs. 63.5%) in our study. In a meta-analysis by Rotenstein et al. (2016) spanning 43 countries, the summary estimate of the prevalence of depression or depressive symptoms among medical students ranged between 9.3% and 55.9%. According to this study, the values determined in our study showed that the medical students at the university faced higher than normal levels of depression. When examining the local literature for data on Turkish medical students, the results were comparable to a study by Doğan and Doğan (2019), where 60.2% of the medical students presented with moderate or clinical depression. The study also highlighted that medical students in countries such as Cameroon, Pakistan, Syria, Sudan, Malaysia, Egypt, Iran, and India all had comparable depression results to students in Türkiye, whereas medical students who studied in Europe had lower levels of depression. Although the following studies were not conducted on medical students, studies by Bayram and Bilgel (2008), Deniz and Sümer (2010), Karaoğlu and Şeker (2010), Öncü et al. (2013), Pesen and Mayda (2020), and Üstün and Bayar (2015) showed comparable levels of depression among students in Türkiye. When looking at the results between the Turkish and international students regarding clinical depression (35.7% vs. 36.1%), the results are comparable to a cross-sectional study by Alshahrani et al. (2024) in Saudi Arabia, with 26.8% of the medical students feeling depression. Puthran et al. (2016) conducted a study among 62,728 medical students and demonstrated a global prevalence of depression among the students of 28.0%, with higher levels of depression seen in Middle Eastern countries.

In studies done by Mirza et al. (2021) and Hamasha et al. (2019), it was found that the prevalence of depression increases in females, younger age groups, lower-class years, and those living alone in rented rooms. Additionally, these studies showed that students with substance abuse had higher levels of depression. Our data showed no significant difference between men and women regarding happiness and depression. However, students in the middle age bracket (21-22) showed higher levels of unhappiness and depression than those in the lower (≤20) or higher (≥23) age groups. This can be explained as the majority of these students tend to be in their 3rd year of medical school, which is known to be the most difficult. Our study agreed with the findings of Mirza et al. (2021) and Hamasha et al. (2019) regarding lower-class years, as students in the pre-clinical years had higher levels of depression and unhappiness than those in the clinical years. Furthermore, our study found that students who consumed alcoholic beverages and smoked had higher levels of unhappiness and depression, and the more they drank and smoked, the higher the prevalence was. In terms of accommodation, no significant differences were noted across all levels of accommodation, differing from the studies by Mirza et al. (2021) and Hamasha et al. (2019).

The most significant factors identified in our study influencing increased unhappiness and depression among students were a family history of depression and prior psychiatric treatment. These findings align with existing research indicating that students with a positive family history of depression are more likely to experience depressive symptoms during medical school (Khan et al., 2006). Similarly, Ghodasara et al. (2011) found that a family history of depression is a strong predictor of higher levels of depression among medical students. Regarding prior psychiatric treatment, studies by Honney et al. (2010) and Coentre et al. (2016) revealed that students with a personal history of depression are more likely to develop or experience worsening depressive symptoms during medical school. Based on our findings and supporting literature, it is evident that medical students with a family history of depression, a personal history of psychiatric issues, or previous treatment require targeted support to alleviate the burden of unhappiness and depression. Tailored interventions, such as support groups for high-risk individuals identified in similar studies, may be warranted to mitigate the risk of depressive symptoms and promote overall well-being among medical students throughout their educational journey (Dhanoa et al., 2022).

Although this study provides valuable insight into medical students' happiness and depression levels, several limitations should be acknowledged. Firstly, the sample size, especially among international medical students, was small, potentially limiting the generalizability of findings. Additionally, the voluntary nature of participation may introduce selection bias, as individuals with more severe mental health issues may be less likely to participate. The "one-shot data collection" design impedes the establishment of causal relationships between variables, necessitating longitudinal studies to capture the dynamics of happiness and depression among medical students. Moreover, reliance on self-report measures may introduce response bias and inaccuracies due to social desirability or recall bias. Language proficiency and cultural differences may have influenced participants' responses, particularly among international students. Furthermore, the study's location in Istanbul, Türkiye, raises questions about the applicability of findings to other medical student populations globally. While Beck's Depression Inventory provides insights into depression severity, its lack of clinical diagnoses limits its utility in capturing the full spectrum of psychiatric disorders impacting mental health outcomes. Finally, the omission of confounding variables such as socioeconomic status, coping mechanisms, and academic performance may influence levels of happiness and depression among medical students. While the study identified demographic factors associated with mental health outcomes, the underlying mechanisms driving these associations remain unclear. Future research could explore the mediating and moderating factors that contribute to the observed disparities in happiness and depression among medical students.

CONCLUSION

This study contributes to our understanding of the psychological challenges faced by medical students attending in a medical school in Istanbul, Türkiye. Although there were no significant differences in mental health outcomes among Turkish and international students, there were still high levels of unhappiness and depression amongst all medical students. Addressing the unique needs of medical students and implementing proactive measures to foster a supportive learning environment are crucial steps toward mitigating the risk of depression and enhancing overall student satisfaction and success in medical education.

Ethical Approval: The study was initiated upon receiving approval from the Istanbul Medipol University's Non-Interventional Clinical Research Ethics Committee, decision dated April 18, 2024, numbered 385.

Authors' Contributions: A.A. conceived the study. A.A., O.K., A.D., and B.G.D. contributed equally to the study design, survey distribution and collection, and data analysis. E.D. assisted in survey collection. All authors (A.A., O.K., A.D., B.G.D., and E.D.) contributed to drafting and revising the manuscript. O.H. finalized the manuscript edits and approved the final version.

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