

## SAĞLIK BİLİMLERİ FAKÜLTESİ ÖĞRENCİLERİNDE DEPRESYON VE ANKSİYETE İLE DUYGU DÜZENLEME GÜÇLÜĞÜ ARASINDAKİ İLİŞKİ

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### ÖZET

#### Anahtar Kelimeler

- Depresyon,
- Anksiyete,
- Duygu Düzenleme.

#### Makale Hakkında

Araştırma Makalesi

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**Amaç:** Bu çalışmanın birincil amacı, Sağlık Bilimleri Fakültesi öğrencilerinde depresyon, anksiyete ve duyu düzenleme güçlüğü arasındaki ilişkiyi incelemek; ikincil amacı ise ölçek puanlarının bazı sosyodemografik ve sağlıkla ilişkili özelliklere göre farklılık gösterip göstermediğini araştırmaktır.

**Yöntem:** Tanımlayıcı ve ilişki arayıcı kesitsel tasarımda yürütülen bu araştırmanın örneklemini, Yeditepe Üniversitesi Sağlık Bilimleri Fakültesi'nde Hemşirelik, Fizyoterapi ve Rehabilitasyon ile Beslenme ve Diyetetik bölümlerinde öğrenim gören toplam 205 öğrenci oluşturmuştur. Araştırmada veri toplama aracı olarak Sosyodemografik Bilgi Formu, Hastane Anksiyete ve Depresyon Ölçeği (HADÖ) ve Duygu Düzenleme Güçlüğü Ölçeği-8 (DDGÖ-8) kullanılmıştır. Veriler, IBM SPSS Statistics Version 26.0 (IBM Corp., Armonk, NY, USA) paket programı kullanılarak analiz edilmiştir. Verilerin değerlendirilmesinde parametrik olmayan istatistiksel yöntemlerden Mann-Whitney U testi, Kruskal-Wallis testi ve Spearman korelasyon analizi uygulanmıştır.

**Bulgular:** Araştırmaya katılan öğrencilerin %86,3'ü kadın, %13,7'si erkektir. Öğrencilerin anksiyete, depresyon ve duyu düzenleme güçlüğü düzeyleri arasında pozitif yönde güçlü ve istatistiksel olarak anlamlı ilişkiler saptanmıştır ( $p < 0,001$ ). Buna göre öğrencilerin anksiyete ve depresyon puanları arttıkça duyu düzenleme güçlüğü düzeylerinin de arttığı belirlenmiştir. Sınıf düzeyine göre anksiyete ve depresyon puanlarında anlamlı fark saptanmazken, duyu düzenleme güçlüğü puanlarının sınıf düzeyine göre anlamlı biçimde farklılaştığı bulunmuştur ( $p = 0,010$ ). Psikiyatrik tanı ve psikolojik danışmanlık öyküsü bulunan öğrencilerin depresyon düzeylerinin anlamlı düzeyde daha yüksek olduğu saptanmıştır ( $p = 0,049$ ). Sigara kullanımı ile duyu düzenleme güçlüğü ( $p = 0,662$ ) ve alkol kullanımı ile duyu düzenleme güçlüğü ( $p = 0,342$ ) arasında istatistiksel olarak anlamlı bir ilişki bulunmamıştır. Madde kullanımı açısından ise örneklem büyüklüğünün yetersiz olması ( $n = 3$ ) nedeniyle elde edilen sonuçların istatistiksel olarak güvenilir olmadığı değerlendirilmiştir.

**Sonuç:** Bu araştırmanın bulguları, sağlık bilimleri öğrencilerinde depresyon ve anksiyete düzeylerinin duyu düzenleme güçlüğü ile anlamlı düzeyde ilişkili olduğunu göstermektedir. Bu doğrultuda, üniversite öğrencilerinin ruh sağlığını desteklemeye yönelik psikolojik danışmanlık ve destek hizmetlerinin yaygınlaştırılması önem taşımaktadır. Ayrıca öğrencilerin duyu düzenleme becerilerini geliştirmeye yönelik psikoeğitim programlarının planlanması ve uygulanması önerilmektedir.

## THE RELATIONSHIP BETWEEN DEPRESSION, ANXIETY, AND DIFFICULTIES IN EMOTION REGULATION AMONG FACULTY OF HEALTH SCIENCES STUDENTS

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### ABSTRACT

#### Keywords

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**Aim:** This study aimed primarily to examine the relationship between depression, anxiety, and difficulties in emotion regulation among students of the Faculty of Health Sciences, and secondarily to explore whether scale scores differed according to selected sociodemographic and health-related characteristics.

**Methods:** This study, conducted using a descriptive and correlational cross-sectional design, included a sample of 205 students enrolled in the Nursing, Physiotherapy and Rehabilitation, and Nutrition and Dietetics departments of the Faculty of Health Sciences at Yeditepe University. Data was collected using the Sociodemographic Information Form, the Hospital Anxiety and Depression Scale (HADS), and the Difficulties in Emotion Regulation Scale-8 (DERS-8). The data were analyzed using the IBM SPSS Statistics Version 26.0 (IBM Corp., Armonk, NY, USA) software package. Non-parametric statistical methods, including the Mann–Whitney U test, Kruskal–Wallis test, and Spearman correlation analysis, were used to evaluate the data.

**Results:** Among the students who participated in the study, 86.3% were female and 13.7% were male. A strong, positive, and statistically significant relationship was found between students' levels of anxiety, depression, and difficulties in emotion regulation ( $p<0.001$ ). Accordingly, it was determined that as students' anxiety and depression scores increased, their levels of difficulties in emotion regulation also increased. No significant differences were found in anxiety or depression scores by year of study; however, DERS-8 scores differed significantly across year levels ( $p=0.010$ ). Students with a history of psychiatric diagnosis and psychological counseling service were found to have significantly higher levels of depression ( $p=0.049$ ). No statistically significant relationship was found between smoking and difficulties in emotion regulation ( $p=0.662$ ) or between alcohol use and difficulties in emotion regulation ( $p=0.342$ ). Regarding substance use, the results were not considered statistically reliable due to the insufficient sample size ( $n=3$ ).

**Conclusion:** The findings of this study indicate that depression and anxiety levels among health sciences students are significantly associated with difficulties in emotion regulation. In this context, it is important to expand psychological counseling and support services aimed at promoting the mental health of university students. Additionally, the planning and implementation of psychoeducational programs designed to improve students' emotion regulation skills are recommended.

## INTRODUCTION

University students encounter multifaceted developmental, academic, and social challenges during a critical transitional period in their lives. Exposure to multiple stress factors during this stage—such as exam anxiety, loneliness, and sleep problems—can lead to increased levels of depression, anxiety, and stress (1). Individual differences also play a decisive role in this process; for example, personality traits such as neuroticism may exacerbate psychological symptoms, while protective characteristics such as perseverance may alleviate them (2).

In a study conducted by Cengiz and Topuzoğlu (2022) with 345 university students, 30.1% of participants were found to have depression and 25.2% generalized anxiety disorder. These high rates underscore the necessity of addressing the mental health of university students at both academic and clinical levels (3). National-level studies in Türkiye have also highlighted significant mental health burdens among university students. For instance, a cross-sectional study during the second wave of the COVID-19 pandemic involving 754 students from seven Turkish universities found that 36.2% of participants exhibited moderate-to-severe anxiety ( $GAD-7 \geq 10$ ) and 55.0% showed clinically relevant depression symptoms ( $PHQ-9 \geq 10$ ) (4).

These national findings underscore the urgent need to address mental health among health sciences students in Türkiye, particularly given their exposure to academic stressors and clinical training demands. Students of health sciences face heightened psychological stress due to the multilayered demands of theoretical courses, practical training, clinical internships, and high academic performance expectations (5).

National and international literature consistently shows that depression and anxiety levels among students in health-related fields are higher than those in the general student population (6,7). This is closely associated with professional expectations, academic workload, and the demands of practical training processes.

Undergraduate students in health sciences are at high risk for psychological problems such as depression, anxiety, and stress due to heavy academic workloads, the stress of clinical practice, and professional expectations. Tripathi et al. (2022) reported that health sciences students had significantly higher levels of depression, anxiety, and stress compared to the general student population, a finding linked primarily to intense course schedules and examination pressure (8). Similarly, Fauzi et al. (2021) found high prevalence rates of depression (36.3%), anxiety (65.0%), and stress (23.6%) among health sciences students in Malaysia, with major risk factors including academic pressure, poor sleep quality, and lack of social support (9). Both studies highlight the urgent need for structured preventive interventions to safeguard the mental health of health sciences students.

Depression and anxiety disorders not only negatively affect psychological well-being but are also associated with serious risks such as social isolation, hopelessness, and suicidal ideation. A review by Motillon-Toudic et al. (2022) emphasized that social isolation is strongly linked to suicide risk, particularly noting that psychological loneliness in young adults can increase

suicidal thoughts. This association was found to be more pronounced in individuals experiencing severe depressive symptoms, with social support serving a protective role (10). Similarly, Dat et al. (2021), in a study of Japanese university students, reported that social anxiety and low self-esteem were associated with suicidal ideation, with this relationship being indirectly shaped by levels of hopelessness (11). Both studies demonstrate that depression and anxiety disorders may heighten suicide risk through social isolation and hopelessness, highlighting the importance of early intervention among university students.

Emotion regulation skills play a key role in the emergence of depressive and anxiety symptoms. According to Gross's Process Model of Emotion Regulation (2015), individuals attempt to regulate their emotions through various strategies, either before or during the emotional experience (12). Functional strategies, such as cognitive reappraisal, can lead to positive outcomes, whereas maladaptive strategies, such as suppression or avoidance, may exacerbate psychological problems. In this context, the emotion regulation strategies employed by university students directly influence their levels of depression and anxiety. Emotion regulation skills, which develop primarily during young adulthood, play a decisive role in psychological resilience, academic performance, and quality of life (13). Indeed, Zhu, Wang, and Wang (2021) found that high stress levels among nursing students during the COVID-19 pandemic were associated with deficiencies in emotion regulation strategies (14).

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Research conducted with healthcare professionals has shown that emotion regulation skills are a determinant of psychological well-being (15). However, studies focusing on students in the health sciences remain limited. Yet these students, who are still in the process of developing their professional identities, are exposed to multiple layers of stressors during their education, and the emotional coping strategies they develop during this time can shape their future professional well-being (16).

In this context, the present study aims to examine the relationship between depression and anxiety levels and difficulties in emotion regulation among health sciences faculty students. Additionally, since there is a lack of research conducted specifically on health sciences faculty students in Türkiye, this study was carried out to address this gap in the literature. The findings are expected to contribute to the development of preventive and protective interventions to support the mental health of university students.

## METHOD

### Study Hypothesis

**H1.1:** There is a significant relationship between anxiety levels and difficulties in emotion regulation among Health Sciences students.

**H1.2:** There is a significant relationship between depression levels and difficulties in emotion regulation among Health Sciences students.

**H1.3:** There is a significant relationship between anxiety and depression levels among Health Sciences students.

### Study Design

This research employed a cross-sectional, correlational survey design aimed at identifying the levels of depression, anxiety, and difficulties in emotion regulation among university students, as well as examining the relationships between these variables.

### Population and Sample

The study population consisted of a total of 1,200 undergraduate students enrolled in the Faculty of Health Sciences at Yeditepe University during the spring semester of the 2023–2024 academic year. The distribution of the population across departments was as follows: Nursing (n=720), Physiotherapy and Rehabilitation (n=260), and Nutrition and Dietetics (n=220).

An a priori power analysis was conducted using G\*Power 3.1.9.7 software based on correlation analysis, which was the primary statistical approach used to examine the relationships among the main study variables. According to Cohen's recommendations, a medium effect size ( $r=0.30$ ), an alpha level of 0.05, and a statistical power of 0.80 were used in the calculation (17). The minimum required sample size was calculated as 85 participants. The final sample consisted of 205 students, exceeding the minimum required sample size.

A proportionate stratified sampling strategy was employed. The Nursing, Nutrition and Dietetics, and Physiotherapy and Rehabilitation departments within the faculty were treated as separate strata. Participants were invited to the study through institutional communication channels, and participation was voluntary. Within each stratum, students who agreed to participate were included proportionally according to the size of each department in the population.

### Inclusion and Exclusion Criteria

#### Inclusion criteria:

- Being an undergraduate student in the Nursing, Physiotherapy and Rehabilitation, or Nutrition and Dietetics departments at XXX University Faculty of Health Sciences
- Volunteering to participate in the study
- Completing the questionnaire form in full and with valid responses

#### Exclusion criteria:

- Incomplete or erroneous questionnaire responses
- Responding only to the descriptive questions but leaving the scale items blank
- Participation from departments outside the Faculty of Health Sciences

## Ethical Considerations

The study was conducted with the approval of the Yeditepe University Clinical Research Ethics Committee (Decision No: 202311Y0682, Date: 27/11/2024). The purpose of the research was explained to the participants, and written informed consent was obtained via an online information and consent form. Data confidentiality and voluntary participation principles were upheld, and the research was carried out in accordance with the Declaration of Helsinki.

## Data Collection Procedure

Data were collected in May 2024 via an online survey (Google Forms). The online survey was configured to allow only one response per participant. Students were contacted through institutional email addresses and social media groups and were invited to complete the questionnaire. The first page of the form contained an information and consent section; participation continued only after consent was provided.

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## Data Collection Tools

The data collection form consisted of three sections:

- 1. Sociodemographic Information Form:** This section collected data on participants' age, gender, year of study, department, history of counseling, psychiatric diagnosis, smoking, alcohol use, chronic illness, psychiatric medication and substance use. The form was developed by researchers based on relevant literature (18,19).
- 2. Hospital Anxiety and Depression Scale (HADS):** Developed by Zigmond and Snaith (1983) and adapted into Turkish by Aydemir et al. (1997), this 14-item scale contains two subscales—seven items assessing anxiety and seven items assessing depression (20,21). Each item is rated on a four-point Likert scale ranging 0–3. The total score for each subscale ranges from 0 to 21. Higher scores indicate higher levels of anxiety and depressive symptoms. The Turkish version of the scale has been shown to be valid and reliable for use in Turkish populations.
- 3. Difficulties in Emotion Regulation Scale–8 (DERS-8):** Developed by Penner, Steinberg and Sharp (2023) and adapted into Turkish by Ekşi and Erik (2023), this 8-item scale measures difficulties in areas such as emotional awareness, acceptance, and maintaining goal-directed behavior (22-24). Items are rated on a Likert-type scale, and higher scores indicate greater difficulties in emotion regulation. The Turkish adaptation study confirmed the validity and reliability of the scale for use in Turkish samples.

## Data Analysis

Data was analyzed using IBM SPSS Statistics version 26.0 (IBM Corp., Armonk, NY, USA). Normality was assessed using the Shapiro-Wilk test. Since the scale scores were not normally distributed, non-parametric methods were used. Spearman's correlation analysis was performed as the primary analysis to examine the relationships among anxiety, depression, and difficulties in emotion regulation. Mann-Whitney U and Kruskal-Wallis tests were conducted as secondary exploratory analyses to compare scale scores across selected sociodemographic and health-related groups. The strength of correlation coefficients was interpreted according to Cohen's criteria, with coefficients of 0.10–0.29 indicating weak, 0.30–0.49 moderate, and  $\geq 0.50$  strong relationships. Statistical significance was set at  $p < 0.05$ .

## RESULTS

The primary analysis examined the relationships among anxiety, depression, and difficulties in emotion regulation. Secondary exploratory analyses were then conducted to compare scale scores according to selected sociodemographic and health-related characteristics.

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Table 1 presents the distribution of demographic characteristics and selected health-related variables of the students in the Faculty of Health Sciences who participated in the study. The majority of participants were female (86.3%) and enrolled in the Nursing Department (65.4%). Approximately one-third of the students were in their fourth year (32.6%). Among the participants, 28.3% reported smoking, 42.4% reported alcohol consumption, and only 1.5% reported substance use. The proportion of students with chronic illness was 10.2%, while 12.2% reported having a psychiatric diagnosis. Furthermore, 9.8% reported using psychiatric medication, and 6.3% had received psychological counseling services.

**Table 1.** Sociodemographic Characteristics of Participants (N=205)

| <b>Variable</b>               | <b>Category</b>        | <b>n*</b> | <b>%*</b> |
|-------------------------------|------------------------|-----------|-----------|
| <b>Gender</b>                 | Female                 | 177       | 86.3      |
|                               | Male                   | 28        | 13.7      |
| <b>Department</b>             | Nursing                | 134       | 65.4      |
|                               | Physiotherapy & Rehab. | 39        | 19.0      |
|                               | Nutrition & Dietetics  | 32        | 15.6      |
| <b>Year of Study</b>          | 1st Year               | 34        | 16.6      |
|                               | 2nd Year               | 62        | 30.2      |
|                               | 3rd Year               | 42        | 20.5      |
|                               | 4th Year               | 67        | 32.6      |
| <b>Smoking</b>                | Yes                    | 58        | 28.3      |
|                               | No                     | 147       | 71.7      |
| <b>Alcohol Use</b>            | Yes                    | 87        | 42.4      |
|                               | No                     | 118       | 57.6      |
| <b>Substance Use</b>          | Yes                    | 3         | 1.5       |
|                               | No                     | 202       | 98.5      |
| <b>Chronic Illness</b>        | Yes                    | 21        | 10.2      |
|                               | No                     | 184       | 89.8      |
| <b>Psychiatric Diagnosis</b>  | Yes                    | 25        | 12.2      |
|                               | No                     | 180       | 87.8      |
| <b>Psychiatric Medication</b> | Yes                    | 20        | 9.8       |
|                               | No                     | 185       | 90.2      |
| <b>Counseling Service</b>     | Yes                    | 13        | 6.3       |
|                               | No                     | 192       | 93.7      |

n\*=Sample size  
 %\*=Percentage

The mean anxiety and depression scores were 7.02 and 7.21, respectively, while the mean DERS-8 score was 14.61. Median (Q1–Q3) values are also presented in Table 2 due to the non-normal distribution of the scale scores.

**Table 2.** Descriptive Statistics of Scale Scores (N=205)

| Scale                                       | Minimum | Maximum | Mean (SD*)   | Median (Q1 - Q3) |
|---|---------|---------|--------------|------------------|
| Anxiety (HADS)                              | 0       | 14      | 7.02 (3.54)  | 9 (6-11)         |
| Depression (HADS)                           | 0       | 17      | 7.21 (3.69)  | 5 (4-8)          |
| Difficulties in Emotion Regulation (DERS-8) | 8       | 37      | 14.61 (6.22) | 14 (12-17)       |

SD\*=Standard Deviation

Positive and statistically significant correlations were found between anxiety and depression scores ( $r=0.672$ ,  $p<0.001$ ), between anxiety and emotion regulation difficulties ( $r=0.514$ ,  $p<0.001$ ), and between depression and emotion regulation difficulties ( $r=0.569$ ,  $p<0.001$ ). These findings indicate that higher emotion regulation difficulties are associated with higher anxiety and depression levels.

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**Table 3.** Spearman Correlations Between Scales (N=205)

|                       |          | 1. Anxiety | 2. Depression | 3. Emotion Regulation |
|-----------------------|----------|------------|---------------|-----------------------|
| 1. Anxiety            | $r^*$    | 1          | 0.672         | 0.514                 |
|                       | $p^{**}$ |            | 0.000         | 0.000                 |
| 2. Depression         | $r^*$    | .672       | 1             | 0.569                 |
|                       | $p^{**}$ | 0.000      |               | 0.000                 |
| 3. Emotion Regulation | $r^*$    | 0.514      | 0.569         | 1                     |
|                       | $p^{**}$ | 0.000      | 0.000         |                       |

$r^*$ =Correlation Coefficient

$p^{**}$ =Significance level (p-value)

Note. Spearman's rho correlation coefficients are reported.  $p<0.001$ .

As secondary analyses, scale scores were compared across selected sociodemographic and health-related variables.

Students with a psychiatric diagnosis had significantly higher depression scores than those without a diagnosis ( $p=0.049$ ). Similarly, students who had received counseling services had significantly higher depression scores ( $p=0.015$ ). Depression scores did not differ significantly according to gender ( $p=0.988$ ), alcohol use ( $p=0.706$ ), smoking status ( $p=0.414$ ), substance use ( $p=0.961$ ), chronic illness ( $p=0.306$ ), regular medication use ( $p=0.909$ ), or psychiatric medication use ( $p=0.319$ ).

**Table 4.** Comparison of Anxiety and Depression Scores by Dichotomous Variables (Mann–Whitney U Test)

| Variable               | Group  | n   | Anxiety Median (Q1 – Q3) | -z* (Anxiety) | p* (Anxiety) | Depression Median (Q1 – Q3) | -z* (Depression) | p* (Depression) |
|------------------------|--------|-----|--------------------------|---------------|--------------|-----------------------------|------------------|-----------------|
| Gender                 | Female | 177 | 9 (7–12)                 | -0.207        | 0.836        | 6 (4–8)                     | -0.016           | 0.988           |
|                        | Male   | 28  | 8 (6–10)                 |               |              | 6 (5–10)                    |                  |                 |
| Alcohol Use            | Yes    | 87  | 9 (6–11)                 | -0.210        | 0.834        | 6 (4–8)                     | -0.377           | 0.706           |
|                        | No     | 118 | 9 (6.25–12)              |               |              | 5.5 (4–8)                   |                  |                 |
| Smoking                | Yes    | 58  | 9 (7–11)                 | -0.045        | 0.964        | 6 (4.25–9)                  | -0.817           | 0.414           |
|                        | No     | 147 | 9 (6–11.5)               |               |              | 6 (4–8)                     |                  |                 |
| Substance Use          | Yes    | 3   | 8 (7–11)                 | -0.557        | 0.578        | 5 (5–6)                     | -0.049           | 0.961           |
|                        | No     | 202 | 9 (6–11)                 |               |              | 6 (4–8)                     |                  |                 |
| Chronic Illness        | Yes    | 21  | 10 (7–13)                | -0.131        | 0.896        | 6 (4–9)                     | -1.024           | 0.306           |
|                        | No     | 184 | 9 (6–11)                 |               |              | 6 (4–8)                     |                  |                 |
| Regular Medication Use | Yes    | 32  | 9 (7–12)                 | -0.334        | 0.738        | 6 (3.75–8)                  | -0.114           | 0.909           |
|                        | No     | 173 | 9 (6–11)                 |               |              | 6 (4–8)                     |                  |                 |
| Psychiatric Diagnosis  | Yes    | 25  | 10 (8–13)                | -1.686        | 0.092        | 8 (4–10)                    | -1.971           | 0.049           |
|                        | No     | 180 | 9 (6–11)                 |               |              | 5 (4–8)                     |                  |                 |
| Psychiatric Medication | Yes    | 20  | 9.5 (8–12.25)            | -1.458        | 0.145        | 7.5 (4.5–8.25)              | -0.997           | 0.319           |
|                        | No     | 185 | 9 (6–11)                 |               |              | 5 (4–8)                     |                  |                 |
| Counseling Service     | Yes    | 13  | 12 (9–14)                | -1.137        | 0.256        | 8 (5–11)                    | -2.425           | 0.015           |
|                        | No     | 192 | 9 (6–11)                 |               |              | 5 (4–8)                     |                  |                 |

-z\*=Standardized test statistic for the Mann-Whitney U test  
p\*=Significance level (p-value)

Kruskal–Wallis test results showed that anxiety scores did not differ significantly by department (p=0.999) or year of study (p=0.381). Similarly, depression scores did not differ significantly by department (p=0.638) or year of study (p=0.402). These findings indicate that both anxiety and depression scores were independent of academic variables.

**Table 5.** Comparison of Anxiety and Depression Scores by Multi-Category Variables (Kruskal–Wallis Test)

| Variable   | Group                            | n   | Anxiety Median (Q1 – Q3) | H* (Anxiety) | df* | p* (Anxiety) | Depression Median (Q1 – Q3) | H* (Depression) | p* (Depression) |
|------------|----------------------------------|-----|--------------------------|--------------|-----|--------------|-----------------------------|-----------------|-----------------|
| Department | Nursing                          | 134 | 9 (6.25–11)              | 0.002        | 2   | 0.999        | 6 (4–8)                     | 0.899           | 0.638           |
|            | Physiotherapy and Rehabilitation | 39  | 9 (7–11)                 |              |     |              | 5 (4–9)                     |                 |                 |
|            | Nutrition and Dietetics          | 32  | 9.5 (8–12)               |              |     |              | 5.5 (3.75–7)                |                 |                 |
| Year       | 1st Year                         | 34  | 10 (8–12)                | 3.069        | 3   | 0.381        | 6 (4–8)                     | 2.935           | 0.402           |
|            | 2nd Year                         | 62  | 8 (7–10)                 |              |     |              | 5 (4–7.75)                  |                 |                 |
|            | 3rd Year                         | 42  | 9 (7–11)                 |              |     |              | 6 (4.25–7.75)               |                 |                 |
|            | 4th Year                         | 67  | 8 (6–10)                 |              |     |              | 5 (3–8.5)                   |                 |                 |

H\*(Chi-square)=Kruskal-Wallis test statistic (chi-square value)

df\*=Degrees of freedom

p\*=Significance level (p-value)

Mann–Whitney U test results indicated that difficulties in emotion regulation did not differ significantly according to gender (p=0.369), alcohol use (p=0.696), smoking status (p=0.951), substance use (p=0.507), chronic illness (p=0.779), regular medication use (p=0.409), psychiatric diagnosis (p=0.463), psychiatric medication use (p=0.750), or history of psychological counseling (p=0.187). Indicating that emotion regulation difficulties were independent of these individual health and behavioral variables.

**Table 6.** Comparison of Emotion Regulation Scores by Dichotomous Variables (Mann–Whitney U Test)

| Variable               | Group  | n   | DERS-8 Median (Q1 – Q3) | - z* (DERS-8) | p** (DERS-8) |
|------------------------|--------|-----|-------------------------|---------------|--------------|
| Gender                 | Female | 177 | 14 (11–17)              | -0.898        | 0.369        |
|                        | Male   | 28  | 14 (12–18)              |               |              |
| Alcohol Use            | Yes    | 87  | 14 (12–17)              | -0.391        | 0.696        |
|                        | No     | 118 | 14 (11–17)              |               |              |
| Smoking                | Yes    | 58  | 14.5 (11–16)            | -0.062        | 0.951        |
|                        | No     | 147 | 14 (12–17)              |               |              |
| Substance Use          | Yes    | 3   | 11 (9.5–16.5)           | -0.664        | 0.507        |
|                        | No     | 202 | 14 (12–17)              |               |              |
| Chronic Illness        | Yes    | 21  | 14 (13–16)              | -0.280        | 0.779        |
|                        | No     | 184 | 14 (11–17)              |               |              |
| Regular Medication Use | Yes    | 32  | 14 (12–17)              | -0.825        | 0.409        |
|                        | No     | 173 | 14 (11–17)              |               |              |
| Psychiatric Diagnosis  | Yes    | 25  | 14 (13–17)              | -0.735        | 0.463        |
|                        | No     | 180 | 14 (11–17)              |               |              |
| Psychiatric Medication | Yes    | 20  | 14.5 (12–16.25)         | -0.318        | 0.750        |
|                        | No     | 185 | 14 (11–17)              |               |              |
| Counseling Service     | Yes    | 13  | 16 (13–18)              | -1.318        | 0.187        |
|                        | No     | 192 | 14 (11–16.25)           |               |              |

-z\*=Standardized test statistic for the Mann-Whitney U test

p\*\*=Significance level (p-value)

As shown in Table 7, difficulties in emotion regulation significantly decreased with advancing year of study ( $H=11.383$ ;  $df=3$ ;  $p=0.010$ ). The highest level of difficulty was observed among first-year students, while the lowest was reported by fourth-year students, suggesting that academic progression and clinical experience may contribute to the development of emotion regulation skills

**Table 7.** Median DERS-8 Scores by Year of Study and Kruskal–Wallis Test Results

| Year of Study | n  | DERS-8 Median (Q1 - Q3) | H* (Chi-square) | df* | p*    |
|---------------|----|-------------------------|-----------------|-----|-------|
| 1st Year      | 34 | 16 (14–20)              | 11.383          | 3   | 0.010 |
| 2nd Year      | 62 | 15 (12–17)              |                 |     |       |
| 3rd Year      | 42 | 14 (11–16)              |                 |     |       |
| 4th Year      | 67 | 13 (11–15)              |                 |     |       |

H\*(Chi-square) = Kruskal-Wallis test statistic (chi-square value)

df\* = Degrees of freedom

p\* = Significance level (p-value)

## DISCUSSION

This study examined the relationships among depression, anxiety, and difficulties in emotion regulation among students of the Faculty of Health Sciences, as well as the associations of these variables with selected sociodemographic and health-related characteristics. The findings provide important insights into the mental health status of university students and the multidimensional factors influencing it.

One of the main findings of the study is the significant positive relationship between depression and both anxiety and difficulties in emotion regulation. This result highlights the strong link between the functionality of emotion regulation strategies and psychological symptoms. Consistent with this, a meta-analytic review by Eadeh et al.(2021) found that psychosocial interventions targeting emotion regulation in adolescents were effective in reducing depression and anxiety symptoms, with these effects being directly related to the development of functional regulation skills (25). Similarly, studies conducted by Daros et al. (2021) have emphasized that improvements in emotion regulation skills lead to significant reductions in psychological symptoms (16). Therefore, emotion regulation difficulties may be considered not only because of depression and anxiety but also as a sustaining factor, limiting access to adaptive coping strategies and prolonging the intensity and duration of negative effects (26). Supporting this perspective, Teixeira et al. (2022) reported that the effects of academic stress are closely associated with emotion regulation, coping skills, and psychosomatic symptoms (27).

These findings are consistent with Gross's Process Model of Emotion Regulation (2015), which posits that individuals regulate their emotions either before the emotional experience or during it, using different strategies. Functional strategies (e.g., cognitive reappraisal, distraction) enhance emotional adjustment, whereas maladaptive strategies (e.g., suppression, avoidance) intensify emotional distress. The positive correlations observed in this study suggest that students, when faced with academic and social stressors, tend to rely more heavily on maladaptive strategies, which in turn perpetuate higher levels of depression and anxiety. These findings may suggest that students with higher psychological symptom levels experience greater difficulties in adaptive emotion regulation(13).

Another noteworthy finding is that students with a psychiatric diagnosis had significantly higher depression scores. This result points to the impact of the chronic course of depression and psychiatric diagnoses on psychological well-being. Mirza et al. (2021) noted that depression and anxiety levels are both common and high among medical students, leading to a long-term need for psychological support (28). Similarly, Perçemkaya and Özkan (2023) found that depression in university students often co-occurs with other psychological symptoms, such as exam anxiety, and negatively affects emotional functioning (29). These results suggest that depressive symptoms in individuals who receive psychological support may not be fully alleviated, underscoring the need to evaluate the quality and continuity of support services.

Data on year of study revealed that emotion regulation difficulties decreased significantly among students in higher years. This finding suggests that as students progress through their

studies, they develop greater emotional awareness and coping skills. According to Gross's (2015) model, functional strategies such as cognitive reappraisal are skills that develop and are learned over time (13). Therefore, the reduction in emotion regulation difficulties among senior students indicates that they may employ more adaptive strategies and manage their emotions more effectively. Supporting this, Kankaya et al.(2022) found that clinical practice in internal medicine wards improved both self-efficacy and coping skills in nursing students (30). Similarly, Albaqawi et al. (2025) emphasized that self-efficacy, social support, and the quality of the learning environment significantly affect clinical performance anxiety in nursing students (31). In a longitudinal study conducted during the pandemic, Morando et al(2024) found that psychological resilience significantly influenced the relationship between nurses' professional quality of life and psychological distress (32). Collectively, these findings suggest that clinical training provides a multidimensional learning environment that develops not only technical skills but also emotional resilience and self-awareness.

On the other hand, no significant differences were found in depression, anxiety, or emotion regulation difficulties in relation to individual health history variables such as gender, alcohol and substance use, or chronic illness. This finding suggests that mental health symptoms are shaped not only by individual health histories or risk behaviors but also by complex psychosocial factors. Previous studies have similarly indicated that depression and anxiety levels among university students are strongly associated with academic pressure, lack of social support, subjective well-being, and coping styles, rather than solely with medical history (14,15,26).

In interdepartmental comparisons, no significant differences were observed in depression, anxiety, or emotion regulation difficulties. This may indicate that students from different disciplines such as nursing, physiotherapy, and nutrition face similar academic and clinical demands. However, some studies have reported that nursing students, in particular, experience higher levels of stress and burnout during clinical training (33). The absence of such differences in the current study may be explained by the homogenization of psychological burden among students in the post-pandemic period. Supporting this, Brites et al. (2024) found that resilience played a mediating role in the relationship between emotion regulation and depression/anxiety, while Liu et al. (2021) demonstrated the interaction between emotion regulation and psychological resilience in relation to test anxiety among Chinese medical students (26,34). These results suggest that the generalized psychological strain following the pandemic may have overshadowed potential differences between departments.

When the cultural context is taken into consideration, the findings of the present study appear largely consistent with international literature; however, cultural norms may shape both the expression of psychological symptoms and the use of emotion regulation strategies. In collectivistic societies such as Türkiye—where family cohesion, social harmony, and emotional restraint are emphasized—students may be more inclined to use suppression and avoidance strategies. Previous research has shown that suppression is more culturally reinforced in East Asian and Middle Eastern contexts, which may in turn intensify symptoms of depression and anxiety (34,35). For example, Liu et al. (2021) found that emotion regulation difficulties

strongly predicted test anxiety in Chinese medical students, a pattern explained by cultural norms that prioritize emotional control and social conformity(34). In contrast, studies conducted in Western countries indicate that students more frequently use cognitive reappraisal and are generally more open in expressing emotions, which may buffer the impact of emotion regulation difficulties on psychological distress (16,25). In Türkiye, academic pressure, economic stressors, and strong familial expectations coexist, potentially amplifying the relationship between maladaptive emotion regulation strategies and psychological symptoms. Therefore, interpreting the current findings within the broader cultural framework suggests that the associations observed between emotion regulation difficulties, depression, and anxiety are likely shaped by culturally embedded norms regarding emotional expression and coping.

## CONCLUSION

This study aimed to determine the levels of depression, anxiety, and difficulties in emotion regulation among students in the Faculty of Health Sciences and to examine the relationships between these variables. The findings revealed that a considerable proportion of students experienced moderate levels of depressive and anxiety symptoms, alongside notable challenges in emotion regulation. The positive relationship between higher levels of depression and anxiety and greater difficulties in emotion regulation indicates that these variables should be addressed collectively within the holistic structure of emotional functioning.

In addition, the finding that difficulties in emotion regulation decreased with higher year of study may indicate that academic experience and clinical exposure contribute to the development of emotional awareness and coping skills.

In line with the secondary aim of the study, the results also demonstrated that certain sociodemographic and health-related characteristics were associated with differences in scale scores. Specifically, while depression and anxiety levels did not significantly differ by year of study, difficulties in emotion regulation varied significantly across class levels. Furthermore, students with a history of psychiatric diagnosis or psychological counseling exhibited higher levels of depression, whereas no significant differences were found in emotion regulation difficulties in relation to smoking or alcohol use.

When evaluated within the framework of Gross's Process Model of Emotion Regulation, the results suggest that university students may experience greater difficulty in using adaptive emotion regulation strategies (e.g., suppression, avoidance), which contribute to a cycle that exacerbates emotional distress. Therefore, emotion regulation skills are directly related not only to psychological well-being but also to academic performance, social adjustment, and professional development.

## Recommendations

- **Implement psychoeducation programs** aimed at improving university students' emotion regulation skills, in combination with individual counseling and group-based support initiatives. Such interventions would not only reduce current symptoms but also enhance emotional functioning and resilience.
- **Develop follow-up-based, individualized psychosocial support programs** for students with a psychiatric diagnosis or a history of psychological support, ensuring continuity of care and promoting their active participation in academic life.
- **Transform university student support units** from structures that intervene only during crises into proactive entities leading preventive and therapeutic mental health policies. The visibility, accessibility, and functionality of these units should be strengthened.
- **Integrate structured content** on stress management, self-awareness, emotion regulation, and self-care into orientation programs, especially for first-year students. Early support for emotional capacity could foster a healthier university experience.
- **Improve the quality of the learning environment** by fostering supportive, inclusive, and psychologically safe educational settings. Strengthening mentoring systems, enhancing instructor–student communication, and reducing excessive academic stressors may contribute to better emotion regulation and overall mental well-being among students.
- **Conduct future studies using longitudinal designs** to track changes in students' psychological symptoms over time, incorporating protective factors such as self-efficacy, self-compassion, and social support into the analytical models for a more comprehensive understanding.

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