

Prevalence and Determinants of Eating Disorders and Mental Health Among University Students in Morocco, 2024

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Abstract:

Objective: The goal of this study was to evaluate the prevalence and frequency of mental health and eating disorders among university students in Morocco. It sought to identify how widespread these issues are, examine the associated risk factors, raise awareness, provide valuable data for future interventions, and contribute to the academic field of mental health and eating disorder research, with a particular focus on underrepresented groups such as Moroccan university students.

Material and Methods: We conducted a cross-sectional survey including 396 students from universities in the Rabat-Salé-Kénitra region, Morocco, in 2024. To gather data, we employed standardized tools, including the Beck Anxiety Inventory, the Hamilton Depression Rating Scale, and the Sick/Control/One stone/Fat/Food (SCOFF) questionnaire. The data analysis was performed using the Epi Info 7.2 software.

Results: The results indicate that 64.3% (CI 95% [59.6%; 69.0%]) of the students reported symptoms of psychological distress, 28.8% (CI 95% [24.1%; 33.5%]) experienced anxiety, 26.4% (CI 95% [21.7%; 31.1%]) showed signs of depression, and 32.2% (CI 95% [27.5%; 36.9%]) exhibited symptoms of eating disorders, with a strong correlation between anxiety, depression, socio-economic status, psychological distress, academic pressure, and eating behaviors.

Conclusion: The findings of this prevalence study provide valuable insights into the occurrence of mental health and eating disorders among university students in the region of Rabat-Salé-Kenitra. The data highlight the significant impact of these issues on university students, emphasizing the need for increased awareness, early intervention, and support systems within academic settings.

Keywords: determinants, eating disorders, mental disorders, Moroccan, prevalence, university students

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Introduction

Mental health challenges, particularly eating disorders (EDs), have become significant concerns among university students globally. These young adults face numerous stressors, such as rigorous academic expectations, social transitions, and the adjustment to adult life, all of which can profoundly impact both their mental and physical well-being, particularly their relationship with food. Eating disorders are multifaceted conditions influenced by a combination of biological, psychological, and socio-cultural factors¹. They primarily affect adolescents and young adults², along with mental health issues like anxiety and depression, and are among the leading causes of morbidity and disability in adolescents and young adults³. EDs can have severe repercussions on both physical and mental health⁴, and they are associated with a heightened risk of mortality⁵. These disorders, including anorexia nervosa, bulimia nervosa, hyperphagia disorder, and other unspecified eating disorders, are characterized by an intense preoccupation with body image and weight^{4,5}.

Over the past few decades, the prevalence of EDs has surged significantly, nearly doubling from 2000 to 2018, with a notable increase in developing countries⁵. In these regions, rapidly evolving body image norms contribute to the rising rates of EDs⁶. A variety of risk factors have been identified as contributing to the development of EDs among adolescents and young adults. These include sociocultural pressures, family dynamics, self-esteem, and depressive and anxiety symptoms^{7,8}. Depression and anxiety are other prominent risk factors, as individuals experiencing depressive and anxiety symptoms are more vulnerable to developing disordered eating behaviors⁵.

Despite the increasing global recognition of EDs, there is a notable lack of in-depth research on their prevalence and contributing factors in Morocco. This gap is particularly concerning given the distinct sociocultural

pressures and rapid lifestyle changes faced by Moroccan adolescents and young adults⁹. Additionally, the limited availability of resources for screening and treatment in the region underscores the need for a deeper understanding of the scope and underlying causes of these disorders¹⁰.

This study aimed to assess the prevalence of eating and mental health disorders among university students in Morocco, with a particular focus on the Rabat-Salé-Kénitra region. By investigating the links between mental health issues such as anxiety, depression, and eating behaviors, this research seeks to shed light on the extent of these challenges. The findings will contribute to the development of enhanced support systems for eating disorders and mental health programs that are better suited to the needs of Moroccan university students, ultimately promoting a healthier and more supportive academic environment. Through a comprehensive survey and data analysis, this study hopes to raise awareness about these critical issues and encourage greater attention to the overall well-being of university students in Morocco. Although eating disorders such as anorexia, bulimia, and binge eating are increasingly common among students worldwide, there has been limited research on these conditions within Moroccan university settings. However, signs of a growing prevalence of EDs in Morocco are becoming increasingly evident. This research specifically investigated the socio-economic, psychological, and academic factors that influence the development of eating disorders among university students in the Rabat-Salé-Kénitra region. The main goal was to identify the key contributing factors to the rise of these disorders among Moroccan students.

Material and Methods

Study objective

The study aimed to assess the prevalence and the determinants of eating disorders (EDs) and mental health

issues among university students in the region of Rabat-Salé-Kénitra in 2024. The study also sought to identify factors associated with the occurrence of these disorders.

Study design

This was a cross-sectional descriptive prevalence study performed between December 2023 and August 2024 to measure the extent of the issue within university students in the region of Rabat-Salé-Kénitra. This approach allowed for an estimation of the frequency of disorders and an exploration of the associated risk factors.

Target population

The study target population was university students. To be eligible for inclusion, participants had to be enrolled in a university located in the Rabat-Salé-Kénitra region and be between the ages of 18 and 29. Students with severe medical conditions or pre-existing diagnosed psychiatric disorders were excluded from the study³.

Sampling

The sample was randomly selected from the students enrolled in universities within the Rabat-Salé-Kénitra region, ensuring it is representative of the university student population. This approach guarantees that the sample accurately reflects the entire population, allowing for the results to be generalized. The sample size was calculated to ensure sufficient statistical precision. Where:

$$n = (Z^2 \times P \times (1-P)) / E^2$$

n=required sample size, Z=Z-score (the number of standard deviations a data point is from the mean, corresponding to the desired confidence level; for example, for a 95% confidence level, Z=1.96), p=Estimated proportion of the population (if unknown, p is typically set to 0.5, which maximizes the sample size), E=Margin of error (95%)¹¹.

Measurement tools

The data were collected using a Sociodemographic Questionnaire that gathers information on factors such as age, gender, educational background, and family situation. The Beck Anxiety Inventory (BAI) is commonly used by healthcare professionals to evaluate the intensity of anxiety symptoms in patients and track their progress over time¹². The Hamilton Depression Rating Scale (HDRS) is generally employed in diagnostic settings by clinicians to assess the severity of depressive symptoms and monitor changes, especially when evaluating treatment effectiveness¹³. The Sick/Control/One stone/Fat/Food (SCOFF) Questionnaire serves as a screening tool for identifying potential eating disorders, often used during initial assessments and followed up with more detailed evaluations if necessary¹⁴. Together, these tools provide valuable insights into a participant's mental health, aiding clinical decisions and helping identify individuals who may require further evaluation or intervention.

Data collection

Data were collected through questionnaires administered both online and in person. Participants received a clear explanation of the study's purpose, and informed consent was obtained before they completed the questionnaires. The participants were asked to complete either electronic or paper versions of the questionnaire anonymously. This approach ensured that their responses remained confidential and unbiased. The questionnaire gathered relevant data on various sociodemographic and psychological variables, which were subsequently compiled for analysis¹⁵. The collected data were processed and analyzed using Epi Info 7.2 software. Descriptive statistical methods were employed to summarize the data, while bivariate analysis was used to explore relationships between different variables. The significance level for statistical tests

was set at p -value<0.05, ensuring that any findings with a probability of less than 5% occurring by chance were considered statistically significant⁴.

Variables studied

This study explores several key variables, including the prevalence of eating disorders, which refers to the percentage of students exhibiting symptoms of conditions like anorexia nervosa, bulimia nervosa, binge eating disorder, and related issues. It also examines sociodemographic factors, such as age, gender, education level, and family background, which may influence an individual's susceptibility to eating disorders or mental health challenges. Additionally, the study investigates psychological factors, including psychological distress, anxiety, and depressive symptoms, which are commonly linked to eating disorders. Finally, the study considers behavioral factors, focusing on students' eating habits, academic stress levels, and other behaviors that may contribute to or increase the risk of developing eating disorders¹⁵.

Ethical considerations

As a guiding principle in any research, ethical and deontological rules must be followed and communicated to participants before data collection.

We ensured the informed consent of the students by clearly explaining that they would be the subjects of our study and explicitly presenting its purpose, emphasizing our respect for their anonymity. The collected data were stored in a secure location with restricted access limited to the research team and destroyed after the dissemination of results and the publication of the study. Anonymity was guaranteed, and only anonymized and summarized data were used for statistical analysis. The study was initiated only after obtaining official authorizations from the Ministry of Health and the Ministry of Higher Education, which sponsored this project, and after the approval of the study

protocol by the CERB (Ethics and Research Committee in Biology) of the Faculty of Medicine and Pharmacy at Mohammed V University in Rabat¹⁶.

Study limitations

Several limitations may affect the study's outcomes. One key limitation is selection bias, as the sample is limited to university students, potentially limiting the generalizability of the findings to other populations. Additionally, recall bias may occur, as participants may either underreport or overreport their eating behaviors or psychological symptoms, which could affect the accuracy of the data collected¹⁷.

Results

Sociodemographic characteristics:

A total of 396 students participated in the study by completing either the electronic or paper versions of the questionnaire. The demographic and personal characteristics of the respondents were compiled in alignment with the conceptual framework of the study to ensure a structured analysis of the collected data.

Regarding gender distribution, 50.7% of the participants identified as male, while 49.3% identified as female, resulting in a male-to-female ratio of 1.02, indicating a slight predominance of males in the sample.

The age distribution of the respondents varied between 18 and 29 years, with an average age of 20.5 years and a standard deviation of ± 2.7 years, reflecting a relatively young student population. Notably, 54.6% of the surveyed university students fell within the 18–19 age group, making it the most represented age category. Among them, 19 years emerged as the most frequently reported age.

Prevalence of eating disorders and psychological disorders

The study sample consisted of the 396 students surveyed, 64% were found to exhibit signs of psychological

distress. Additionally, 28% showed symptoms of anxiety, while 26% demonstrated depressive symptoms that were consistent with both the Beck Depression Inventory and the Hamilton Depression Rating Scale. Furthermore, 32.2% of the participants displayed characteristics that were indicative of eating disorders, as assessed by the SCOFF questionnaire. These findings highlight the significant mental health challenges faced by a considerable portion of the student population, emphasizing the need for further investigation and intervention.

Among the 396 students surveyed, 32.2% were identified as exhibiting symptoms that aligned with eating disorders, as determined by the SCOFF questionnaire. Within this group, 15.1% of participants showed signs of anorexia nervosa, 11.9% displayed symptoms consistent with bulimia nervosa, and 5.2% exhibited characteristics of hyperphagia (binge eating disorder). These findings underscore the presence of a range of eating-related disorders within the student population, highlighting the importance of addressing these issues in mental health support services.

Table 1 Sociodemographic characteristics of the sample (n=396)

Variable	Frequency	Percentage (%)
Gender		
Male	200	50.7
Female	195	49.3
Age (years)		
[18; 21]	182	46, 5
[22; 25]	148	37, 4
[26; 29]	63	16, 1
Academic pressure		
Low stress	58	14, 7
Moderate stress	104	26, 5
High stress	232	58, 8
Socio-economic status		
Low socio-economic	107	27, 1
Moderate socio-economic	251	63, 6
High socio-economic	36	9, 3
University residence		
Yes	48	12, 2
No	347	87, 8
Eating habits		
Symptom of anorexia nervosa	59	15, 1
Symptom of bulimia nervosa	47	11, 9
Symptom of hyperphagia nervosa	20	5, 2
No symptom	268	67, 8

Prevalence of psychological distress mental and eating disorders

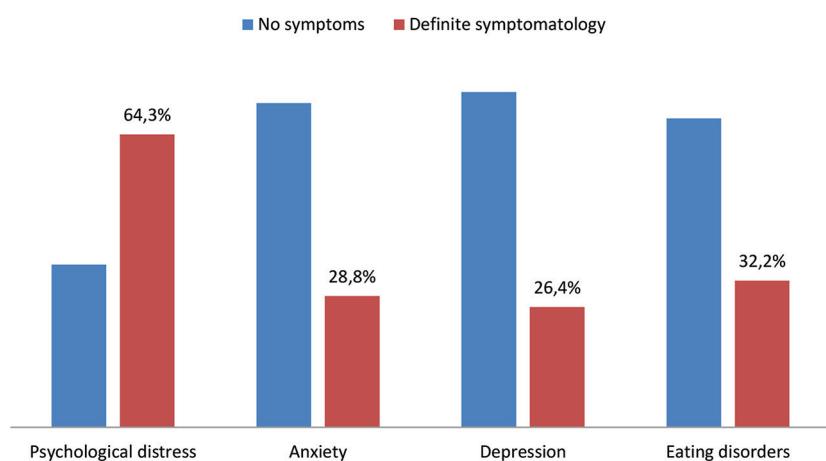


Figure 1 Prevalence of mental disorders and psychological indicators (N=396)

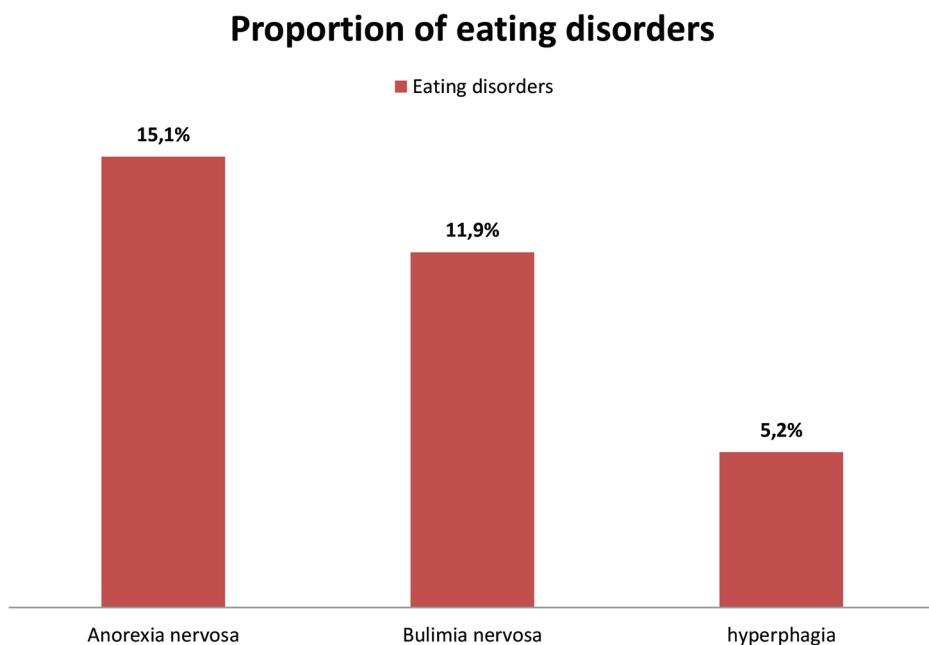


Figure 2 Proportion of different eating disorders

Associations between eating disorders, psychological disorders, socio-economic factors, and eating habits

This study explored the prevalence of eating disorders (EDs) among 396 participants, examining psychological, academic, socio-economic, and dietary factors. Statistical analysis revealed significant associations between these variables and ED prevalence. Psychological distress showed the strongest link, with 72.5% of affected individuals experiencing EDs. Anxiety (67.4%) and depression (62.8%) were also major contributors. Socio-economic status played a role, as ED prevalence was higher among participants with lower economic status (57.7%) and those without university housing (51.9%). Additionally, irregular eating habits (76.3%) and strict diets (65.5%) were strongly associated with EDs. These findings highlight the multifaceted nature of ED risk factors.

Discussion

The high prevalence of psychological distress, anxiety, depression, and eating disorders among Moroccan university students raises significant concerns regarding their mental well-being. This trend aligns with a growing global recognition that university students are increasingly vulnerable to a variety of mental health challenges. Contributing factors to this high rate of psychological distress include academic pressures, societal expectations, and financial difficulties, all of which can exacerbate mental health issues within this demographic. Moreover, the observed connection between emotional distress and unhealthy eating behaviors suggests the presence of a harmful cycle¹⁸. Negative emotions not only lead to poor eating habits, but unhealthy eating patterns can, in turn, worsen psychological and emotional difficulties. This bidirectional relationship underscores the urgent need for

Table 2 Associations between eating disorders, psychological disorders, socio-economic factors, and eating habits

Variable	Eating disorders % (N=76)	No eating disorders % (N=320)	Statistical test (p-value)
Psychological disorders			
Anxiety (beck scale)	67.4 (52)	30.2 (96)	0.02
Depression (beck scale)	62.8 (48)	28.0 (67)	0.03
Academic pressure			
High stress (stress scale)	72.5 (55)	37.8 (122)	0.01
Socio-economic factors			
Low socio-economic status	57.7 (44)	39.1 (123)	0.04
University residence	51.9 (39)	38.4 (122)	0.05
Eating habits			
Irregular eating habits	76.3 (58)	41.2 (131)	0.01
Strict diets	65.5 (49)	29.0 (93)	0.03

tailored mental health interventions that address the specific needs and challenges faced by university students¹⁹.

The link between eating disorders and mental health issues such as anxiety and depression is particularly concerning. Students with eating disorders displayed significantly higher rates of anxiety and depression, indicating a strong interconnection between these mental health conditions. This suggests that tackling one condition may be crucial in managing the other¹⁹.

Academic pressure has been identified as a key factor contributing to the development of eating disorders. The demanding expectations in academic settings often lead students to experience heightened stress, which can trigger or exacerbate eating disorders. This highlights the role of academic stress as a critical risk factor for mental health issues among students²⁰.

Socio-economic factors also play a significant role in the prevalence of eating disorders among university students. Students from lower socio-economic backgrounds, particularly those living in university dormitories, are more likely to exhibit signs of eating disorders. These students often face challenges such as limited access to nutritious food and the added strain of managing tight financial

resources, all while balancing academic and personal responsibilities²¹.

Irregular eating habits, such as skipping meals or following restrictive diets, are notably common among students with eating disorders. These unhealthy eating behaviors are especially prevalent among those experiencing high levels of psychological distress, highlighting a strong overlap between mental health issues and eating behaviors. If left unaddressed, these harmful eating habits may perpetuate or even worsen mental health conditions over time²⁰.

Given these findings, it is imperative that universities develop comprehensive mental health support systems. Such systems should not only include psychological counseling but also initiatives that promote healthy eating behaviors and effective stress management. Addressing both the psychological and physical aspects of student well-being is essential to fostering a healthier, more resilient student population¹⁰.

Conclusion

This study underscores the urgent need for comprehensive mental health services and targeted

eating disorder prevention programs specifically tailored to university students. The substantial prevalence of psychological distress and eating-related issues within this population calls for interventions that address not only emotional well-being but also the promotion of healthy eating habits⁷. Implementing such initiatives could significantly enhance students' mental health, while also improving their academic performance and overall quality of life. By providing the necessary support, universities have the potential to foster a healthier, more resilient student body, one that is better equipped to handle the personal and academic challenges they face²².

The findings also highlight the significant associations between eating disorders and various psychological factors, such as anxiety and depression, as well as socio-economic factors, including socio-economic status and living arrangements (e.g., university residence). These insights emphasize the need to consider the complex interactions between mental health, socio-economic conditions, and eating behaviors in understanding the development of eating disorders among university students. As a result, integrating psychological support and stress management programs in Moroccan universities is crucial for both preventing and addressing these disorders²¹. To further inform effective interventions, future research should focus on evaluating the impact and success of such targeted programs for this vulnerable group²².

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Conflict of interest

The authors declare that they have no conflicts of interest regarding this study. The research was conducted independently, with no financial, personal, or institutional influences that could have affected the objectivity or integrity of the findings.

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