

Role Of The Family Environment In The Mental Health Of First-Year University Students

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Abstract:

Background: University life is a critical developmental stage characterized by increased academic, social, and emotional demands that can significantly affect students' mental health. Anxiety and depression are common in this group and are influenced by contextual factors. Understanding how sociodemographic and family variables affect students' emotional well-being is important for early identification of vulnerabilities. This study addresses these issues by analyzing the psychosocial profile of university students.

Materials and Methods: Among 77 students, symptoms were assessed in relation to gender, age, socioeconomic status, alcohol use, and family dysfunction. Sociodemographic data were collected, and validated instruments were used, including the Beck Depression Inventory, Hamilton Anxiety Rating Scale, Family Functioning Scale (FF-SIL), AMAI socioeconomic status scale (NSE 8X7), and AUDIT for alcohol consumption. These tools classified depression, anxiety, family functioning, socioeconomic status, and alcohol consumption risk. Data were analyzed using descriptive and inferential statistics, including the Mann-Whitney U test, chi-square test, and logistic regression. Statistical significance was set at $\alpha = 0.05$.

Results: The analysis found no significant differences in depressive or anxious symptoms by gender, socioeconomic status, or alcohol use ($p > 0.05$). In contrast, significant differences were found based on the degree of family dysfunction ($p < 0.01$), highlighting the importance of the family environment in student mental health.

Conclusion: The findings suggest that, in this sample, family dynamics have a greater impact in mental health than gender or socioeconomic status, supporting the need for psychoeducational interventions to improve the emotional and family well-being of university students.

Key Words: Psychosocial profile, university students, family dysfunction, anxiety, depression, university mental health.

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The transition to university represents a significant change for young people, requiring academic, personal, family, and social adjustments. For many students, this period marks the beginning of greater independence. However, this transition comes with considerable challenges. Research indicates that the first year of university is particularly difficult, characterized by high levels of stress and psychological vulnerability.¹⁻³ Supporting the mental health of university students is essential, as it directly affects academic performance, retention, and overall quality of life. Family dynamics can act as a protective factor or, conversely, exacerbate emotional challenges.⁴⁻⁷ A successful adjustment to university requires skills such as time management, decision-making, emotional regulation, and goal-setting. These competencies promote academic success and help prevent anxiety, depression, and burnout. However, students have varying levels of resources to cope with these challenges. First-year students are particularly vulnerable. Studies show that they experience higher rates of anxiety, stress, and depression compared to students in later years.⁸⁻¹⁰ This vulnerability is exacerbated by academic pressure, worries about their future careers, financial difficulties, and insufficient social support. Although universities have implemented policies to support mental health, further measures are needed.¹¹⁻¹³ The COVID-19 pandemic further intensified these challenges. Disruptions to in-person teaching, social isolation, and persistent uncertainty significantly impacted students' mental health. Recent studies report substantial increases in anxiety and depression during and after the pandemic.¹⁴⁻¹⁸ Multiple studies show that university students' mental health declined significantly worldwide before, during, and after the COVID-19 pandemic. Evidence points to a sustained rise in anxiety, depression, and stress, with many symptoms persisting after in-person classes resumed.¹⁹⁻²³ Research from the Americas, Europe, and Asia found

that over half of students experienced moderate or severe anxiety and increased depressive symptoms. High levels of emotional exhaustion, concentration problems, loneliness, and hopelessness were also common. In the United States, the United Kingdom, Italy, Germany, Spain, Turkey, and Southeast Asian countries, psychological distress rates surpassed pre-pandemic levels, often intensified by social isolation and academic uncertainty. Overall, the literature indicates that the pandemic had a profound and lasting effect on university students' psychological well-being worldwide.¹⁹⁻²³

Reduced social interaction and increased workload associated with online learning further contributed to the decline in mental health.²⁴⁻²⁶ The family environment plays a fundamental role in students' adaptation to university life. Emotional support, effective communication, and financial stability can mitigate academic stress. Conversely, insufficient support, family conflicts, or unrealistic expectations increase vulnerability. Self-esteem and self-efficacy are closely linked to family relationships and influence motivation and perseverance, which are essential for facing university challenges. When families foster confidence and independence, students are better prepared to manage academic and emotional stress. However, factors that influence students' mental health can be classified into personal, emotional, family, social, and academic domains.²⁷⁻²⁹ Protective factors include resilience, social support, a sense of belonging to a group, and motivation to study. Risk factors include low self-esteem, inadequate coping mechanisms, social isolation, and financial stress. Understanding the interactions among these elements is fundamental to developing effective support programs.^{30,31} The global situation is concerning, stress, anxiety, depression, and academic burnout have increased. These findings show the urgent need for strategies that consider students' social and psychological contexts. This article examines the psychosocial profile of first-year Nutrition students at the Faculty of Medicine of the Autonomous University of Yucatán (UADY). Based on the identification of risk factors, the article recommends implementing specific strategies, such as early mental health screenings, resilience-building workshops, and personalized academic counseling, to improve students' mental health and academic performance.

I. Material And Methods

This observational, cross-sectional study included all 77 first-year students enrolled in the Bachelor of Nutrition Program at the Autonomous University of Yucatán in 2024. Informed consent was obtained from all participants. Inclusion criteria required students to be newly enrolled in the Bachelor of Nutrition Program and to have completed all assessment instruments. Students who withdrew, declined participation, or submitted incomplete assessments were excluded. Qualitative variables included gender, symptoms of depression and anxiety, family functioning, socioeconomic status, alcohol consumption, and psychosocial profile. Age was the quantitative variable.

Procedure methodology: Participants received study information and provided informed consent before completing electronic assessments from January to August 2024. The instrument comprised seven sections, beginning with informed consent as described by Pérez-Padilla et al., 2025.³² The first section collected general information, including name, sex, age, and grade level. The Beck Depression Inventory, a 21-item questionnaire, assessed depressive symptoms. Each item offered four response options, scored from 0 to 3, to evaluate symptom severity. Of the 21 items, 15 addressed psychological and cognitive symptoms, and 6 addressed somatic and vegetative symptoms. The total score ranged from 0 to 63. Depression levels were categorized as follows: 0-9, no depression; 10-18, mild depression; 19-29, moderate depression; and 30 or more, severe depression. The Hamilton Anxiety Rating Scale assessed anxiety levels using 14 items, each rated from 0 to 4 based on symptom frequency and intensity. Total scores ranged from 0 to 56. Anxiety levels were classified as follows: 0-5, no anxiety; 6-14, mild anxiety; and 14-56, moderate to severe anxiety. Family functioning was assessed using the Family Functioning Scale (FF-SIL), which measures perceptions of family members and their roles across seven domains: cohesion, harmony, communication, adaptability, affectivity, roles, and permeability.

The 14-item questionnaire uses a 1-5 frequency scale. Higher scores indicate healthy family functioning, while lower scores suggest dysfunction, communication issues, conflict, or lack of support. Participants were categorized as follows: 57-70, functional families; 43-56, moderately functional; 28-42, dysfunctional; and 14-27, severely dysfunctional families.

Socioeconomic level was measured using the AMAI NSE 8X7 instrument, which assesses eight variables related to household income and material well-being. Households were classified into one of seven AMAI-defined socioeconomic levels, from A/B (high) to E (very low), based on access to education, goods, and services. The Alcohol Use Disorders Identification Test (AUDIT), developed by the World Health Organization, identifies problematic alcohol use and assesses the risk of alcohol-related disorders. The AUDIT evaluates risky consumption, symptoms of dependence, and harmful consequences. It consists of 10 items, each scored 0-4, for a total score of 0-40. Scores are interpreted as follows: 0-7 (low risk), 8-15 (moderate risk), 16-19 (high risk), and 20-40 (very high risk, probable dependence).

Statistical Analysis

Quantitative data were presented as mean \pm standard error and visualized using box-and-whisker plots and descriptive tables. Qualitative data were summarized as percentages and frequencies. Data processing was conducted in Microsoft Excel (version 2108, Microsoft Office LTSC Professional Plus 2021), while statistical analyses were performed using JAMOV (version 2.6.19 2024) and PAST (version 5.17, 2024, University of Oslo). The non-parametric Mann-Whitney U test was used to compare quantitative data, and chi-square test was used for qualitative data. Finally, logistic regression analysis was used to determine risk factors associated with depression and anxiety. The significance level was set at $\alpha = 0.05$.

The study results were provided to the Psychopedagogical Department of the Faculty of Medicine at the Autonomous University of Yucatán to support student follow-up and assistance. All participants voluntarily consented to participate by signing an informed consent form. Participant information was managed confidentially to ensure privacy during data collection, analysis, and result presentation. The study received approval from the Ethics Committee (FMED-2018-0002), in accordance with current national health research regulations as specified in the Regulations of the General Health Law, effective since 1987 and amended in 2014.

II. Result

Table 1 shows the frequency distribution of students by gender. Of the total participants ($n = 77$), the majority identified as female (52, 67.5%).

Table 1. Distribution of students by sex

Sex	Frequency	Total (%)
Female	52	67.5
Male	25	32.5

The age distribution of students was different for women and men. Statistical analysis found significant difference between the groups (women: 18.3 ± 0.97 years; men: 19.1 ± 1.72 years; Mann-Whitney U test, $p = 0.023$; $d = 0.269$; $n = 77$; Figure 1).

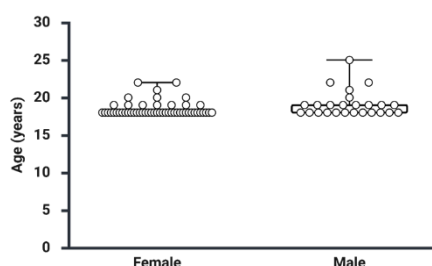


Figure 1. Comparison of the ages of nutrition students by gender; no significant differences were observed ($p > 0.05$).

All participants completed the Hamilton Anxiety Rating Scale indicated that 61% ($n = 47$) of students had no symptoms, 31% ($n = 24$) were mild, and 8% ($n = 6$) had moderate or severe anxiety (see Figure 2A). Anxiety symptoms were observed in 29.9% ($n = 23$) of women and 9.1% of men ($n = 7$) ($\chi^2 = 1.87$, $p = 0.1714$). For depression, the student completed the Beck Depression Inventory-II (BDI-II). The results showed that most students (76.6%) exhibited no symptoms of depression, while 18.2% ($n = 14$) demonstrated mild, 5.2% ($n = 4$) moderate depression (see Figure 2B). Depressive symptoms were identified in 16.9% ($n = 13$) of women and 6.5% of men ($n = 5$) ($\chi^2 = 2.556$, $p = 0.6274$).

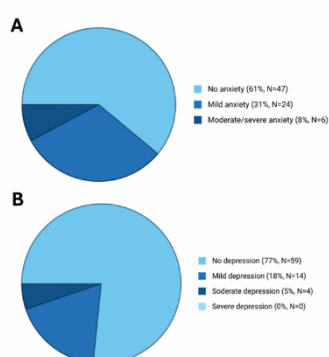


Figure 2. Prevalence of depression and anxiety among students in university students. Panel A displays the distribution of mild, moderate, and severe anxiety. Panel B presents the distribution of mild, moderate, and severe depression.

Results from the Family Functioning Questionnaire (FF-SIL) indicated that 24 students (31.2%) demonstrated functional family dynamics, 38 (49.4%) were moderately functional, 12 (15.6%) were dysfunctional, and 3(3.9%) were severely dysfunctional. Regarding socioeconomic status, 21 students (27.3%) were classified as level A/B, 24 (31.2%) as level C+, 13(16.9%) as level C-, 7 (9.1%) as level C-, 10 (13%) as level D+, and 2 (2.6%) as level D. According to the Alcohol Use Disorders Identification Test (AUDIT), the majority of students (96.1%, 74 of 77) exhibited low-risk alcohol consumption, with only three students (3.9%) exceeding low-risk recommendations.

A logistic regression model was employed to assess the association between depression and the variables of age, family dysfunction, sex, socioeconomic status, and alcohol consumption. The model yielded an adjusted AIC of 74.9, and Nagelkerke's coefficient of determination indicated that 35.8% of the variability in depression was explained ($R^2_N = 0.358$). The likelihood ratio test confirmed statistical significance ($\chi^2 = 20.9$; $p < 0.001$). After adjustment, only family familiar dysfunction was associated with depression (see Table 2), indicating that this variable is a significant factor in the likelihood of developing depressive disorder.

Table 2. Coefficients of the logistic regression model for depression

Predictor	Z	P	Odds Ratio
Age	-1.679	0.093	0.656
Sex	1.212	0.226	2.463
Socioeconomic Level	-1.767	0.077	0.266
Alcohol Consumption	0.471	0.637	1.922
Family Dysfunction	3.633	<0.001	11.495

Similarly, a logistic regression model was applied to examine the association between anxiety and the variables of age, family dysfunction, sex, socioeconomic status, and alcohol consumption. The model produced an AIC of 90.4, and Nagelkerke's coefficient of determination showed that 37.1% of the variability in anxiety was explained ($R^2_N = 0.371$). The likelihood ratio test indicated statistical significance ($\chi^2 = 24.6$; $p < 0.001$). After adjustment, only family dysfunction was associated with anxiety (see Table 3), indicating that this variable is a significant factor in the likelihood of experiencing anxiety symptoms.

Table 3. Coefficients of the logistic regression model for anxiety.

Predictor	Z	P	Odds Ratio
Age	-1.124	0.261	0.781
Sex	1.379	0.168	2.603
Socioeconomic Level	0.608	0.543	1.444
Alcohol Consumption	1.294	0.196	5.746
Family Dysfunction	4.072	<0.001	11.218

III. Discussion

This study examined the psychosocial profile of nutrition university students, to assess whether sociodemographic, behavioral, and family factors are linked to symptoms of depression and anxiety. The results showed no significant gender differences in symptoms of depression or anxiety. This contrasts with previous studies reporting higher rates among women in university settings.^{8,33,34} Similar academic demands, stress levels, or coping strategies may explain this finding. The sample size may also have limited the detection of subgroup differences. Low socioeconomic status was not significantly associated with symptoms of depression or

anxiety. Despite previous research indicating greater emotional challenges among disadvantaged students³⁵⁻³⁷, nutrition students in this study responded similarly regardless of socioeconomic status.

Although alcohol consumption is often linked to mood disorders³⁸, this association was not found in this study. The analysis may have been limited by not assessing alcohol use frequency or patterns. In some cases, substance use may serve as a coping strategy for stress rather than a direct cause of emotional distress and anxiety.³⁹

These findings highlight the significant influence of the family environment on students' emotional and psychological development. Family dysfunction, including poor communication, persistent conflict, lack of support, or violence, creates a stressful and unsupportive environment. For students in health-related fields, high academic and clinical demands can intensify the impact of family dysfunction. Students from such backgrounds are more likely to experience anxiety, depression, low self-esteem, and relationship difficulties.⁴⁰ Family dysfunction can also hinder the development of adaptive coping skills, making stress management more difficult and increasing vulnerability to emotional distress. In academic settings, these challenges may compromise well-being and performance during training and clinical placements, where self-control, empathy, and emotional stability are essential.^{41,42} The results indicate that family experiences can significantly affect mental health at the start of academic training.

Research shows that family dysfunction negatively affects university students' psychological well-being and their ability to build support networks.^{43,44} Students from dysfunctional families often struggle with communication and relationship-building with peers and professors. This dysfunction may also limit participation in group activities or discourage seeking help. Institutions should proactively identify at-risk students and implement targeted interventions to enhance resilience, foster belonging, and create inclusive environments that address emotional needs. Timely social support programs can reduce vulnerability, as social support is a recognized protective factor against anxiety and depression.^{45,46}

The findings indicate that the psychosocial profile of nutrition students is primarily determined by family factors, rather than by individual characteristics such as gender, socioeconomic status, or alcohol consumption. Therefore, mental health interventions for this population should prioritize addressing emotional aspects within the family environment.

Several important limitations should be considered when interpreting these results. First, the use of self-report instruments may introduce biases, including a tendency to provide socially desirable responses or to inaccurately self-assess symptoms. Additionally, the cut-off points used to assess depression and anxiety may not accurately reflect the clinical reality of this population, particularly if these thresholds have not been locally validated. The study also did not control for other psychological or medical conditions, or for factors such as history of trauma, social support, academic stress, or personality traits, all of which could have influenced the findings. These limitations indicate that future research should employ multiple assessment methods and more rigorously control for confounding variables to improve accuracy. Moreover, future studies should utilize larger samples and mixed-methods approaches to better examine family dynamics and their impact on students' mental health.

IV. Conclusion

The findings show a strong link between family dysfunction and higher levels of anxiety and depression in university students. In contrast, gender, socioeconomic status, and alcohol use were not significantly associated with these symptoms. These results underscore the need for psychological and educational support to improve students' emotional well-being and strengthen family relationships. Mentoring and counseling can help identify at-risk students and support them in developing effective coping strategies.

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