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Predicting Psychological Health among University Students in light of Psychological, Educational, and Demographic Variables: An Evaluation study

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ABSTRACT

Purpose: Psychological health refers to the comprehensive state of an individual's emotional, cognitive, and behavioural well-being. The topic of considerable interest and scholarly investigation pertains to the psychological well-being and emotional stability of university students as they navigate their academic endeavours. This study aimed to examine the influence of various psychological, educational, and demographic factors on the mental health of Jordanian university students. These factors include gender, type of residence, type of college, academic level, satisfaction with family harmony, level of academic achievement, religiosity, and smoking. In order to accomplish this goal, a psychological health scale was created to evaluate the psychological health of the participants in the study. **Method:** The sample comprised 1,420 male and female students randomly selected from Jordanian university students enrolled in the second semester of the academic year 2021-2022. **Findings:** The study's findings indicated a moderate level of psychological health among university students. The correlation coefficients among the variables under investigation were generally low, but they were found to be statistically significant ($p < 0.05$). Additionally, all variables made significant contributions to the explanation of the variance in levels of psychological health. Satisfaction with family harmony had the highest explained variance at 14.6%, while academic level had the lowest at 0.6%. **Originality/Significance:** The results of this study led to the development of a standard linear regression analysis equation for predicting the psychological health levels of university students in Jordan.

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1. Introduction

The notion of psychological health is inherently multifaceted and intricate, and despite its widely recognised significance, establishing a universally agreed-upon definition continues to pose difficulties. The rationale for this challenge stems from the complex nature of psychological health and the subjective perception of well-being and psychological functioning. The concept of psychological health is intrinsically interconnected with ideas of equality and diversity. The concept extends beyond the mere absence of psychological disorders and encompasses multiple dimensions of an individual's personality and inclinations. The concept of well-being encompasses various aspects, including emotional well-being, cognitive functioning, the capacity to effectively manage stress, sustain interpersonal relationships, and successfully adapt to the challenges encountered in life. Psychological health encompasses the absence of distress and the presence of positive attributes and capabilities. Psychologists and scholars acknowledge the importance of considering the complex nature of psychological health in its definition and assessment. Recent research in the field of psychological health has concentrated on constructing comprehensive models and frameworks that encompass the diverse aspects of well-being. Furthermore, there is a growing focus on the cultural and contextual elements that impact the perception of psychological well-being in diverse societies (Hernández-Torrano et al., 2020; Huppert & So, 2013; Okasaka et al., 2008; Westerhof & Keyes, 2010).

According to Fusar-Poli et al. (2020), psychological health is defined as the harmonious balance and integration of an individual's psychological functions, resulting in self-acceptance and integration into society. This equilibrium leads to a feeling of satisfactory contentment and proficiency. Bhugra, Till, and Sartorius (2013) provide a definition of psychological health as a multifaceted psychological and emotional state characterised by feelings of contentment, happiness, self-satisfaction, security, and psychological stability. This state promotes both psychological and social harmony. Mamoun, Khalfawi, and Khanfour (2023) define psychological health as the cohesive and congruent manifestation of an individual's personality, which is influenced by selflessness. According to the World Health Organisation (WHO) (2023), health is defined as a comprehensive state that includes physical, psychological, and social well-being, going beyond the mere absence of disease or disability. Psychological health is a vital aspect of overall health, referring to a state of well-being that enables individuals to utilise their abilities, manage typical stressors, and make meaningful contributions to society.

Several key characteristics can indicate an individual's psychological well-being, providing a comprehensive assessment of their mental health. These factors encompass feelings of psychological comfort, reassurance, inner calm, and contentment. Moreover, individuals who possess good psychological well-being exhibit the ability to establish practical and attainable objectives, showcasing a proactive and intentional attitude towards life. They demonstrate self-directed behaviour by effectively managing internal conflicts and maintaining control over their actions and decisions. Moreover, they maintain efficient communication with the external world, perceiving their environment with precision and correctness. Psychological well-being is characterised by emotional stability, wherein individuals demonstrate resilience when confronted with various life challenges. They exhibit a broad array of interests and a readiness to take on responsibility, engaging in various tasks and obligations. The ability to learn from past experiences and adapt to future challenges has a significant impact on reducing anxiety and improving overall psychological health (Clément et al., 2009; Routledge et al., 2013).

This study seeks to examine the predictive ability of specific psychological, educational, and demographic factors in relation to the psychological well-being of university students in Saudi Arabia. This study was motivated by the observed increase in the student population relative to the general population as well as the growing incidence of behavioural issues among university students. This trend has attracted significant attention from both the media and university administrations, as evidenced by the increased demand for psychological counselling services. The changing severity and nature of students' issues, as well as the identified associations between psychological health levels and different variables, highlight the significance of this investigation. Psychological health has become a significant factor in predicting student violence, leading researchers to investigate specific variables that may indicate psychological health conditions. This study aims to investigate various factors that have been studied in foreign contexts but have not been extensively addressed in Arab studies. These factors include gender, academic level, college, satisfaction with family harmony, perception of free time, housing type, and smoking. Universities can develop targeted guidance programmes to improve low levels of psychological health or enhance existing ones by identifying the roles of these variables. This endeavour aligns with the funda psychological role of universities, which is to foster the holistic and well-balanced development of the university student's personality.

2. Literature Review

The university environment has a substantial impact on a student's psychological development as an accredited educational institution. Interacting with professors and peers, being exposed to the academic curriculum, and actively engaging in the learning process collectively contribute to the holistic development of an individual's personality. Various educational factors significantly influence a student's psychological well-being, including the quality of student-teacher relationships, peer dynamics, the academic curriculum, and instructor effectiveness (Campbell et al., 2022). Education and psychological health have similar objectives, such as developing well-rounded individuals who are mentally fit for life. Torres (2001) emphasises the significant role of psychological health in universities. Universities strive to develop a generation that possesses both academic proficiency and psychological well-being, enabling them to achieve self-fulfilment and effectively address challenges.

To achieve this objective, it is necessary to provide curricula that are suitable for students' ages and abilities, while also fostering a positive and tension-free environment for interaction between educators and students. Developing a comprehensive personality is a fundamental psychological goal for both universities and students. The success of this endeavour has a positive impact on the university's effectiveness and also benefits society as a whole. Furthermore, Psychological health has implications beyond the individual level, affecting society as a whole. Positive interactions among university administration, faculty, and students play a crucial role in the psychological development of students. Social relationships in the university setting have a significant influence on students' psychological well-being, promoting positive educational and psychological growth. Educational research has focused on studying the psychological well-being of university students, exploring the various psychological, educational, social, and demographic factors associated with their mental health. This research has broad implications for academic success, the reduction of violence tendencies, and the management of various behaviours and disorders in university students (Campbell et al., 2022; Hammoudi Halat et al., 2023).

In a study conducted by Romito and Grassi (2007), the impact of violence on the psychological well-being of Italian university students was investigated. The study revealed several symptoms associated with impaired psychological well-being, including depression, panic attacks, alcohol dependence, eating disorders, obsessive-compulsive disorder, and suicide attempts. Furthermore, the study found a significant statistical association between levels of psychological health and the occurrence of violence, both in general and across its various sub-dimensions. Research on violence in university settings has consistently emphasised its significance as a measure of students' psychological well-being. Psychologists agree that violence significantly hinders the typical psychological development of students. Fagan and Wilkinson (1998) observed that violence is widespread among university students and has significant effects on their economic, social, political, and psychological disparities. The researchers proposed that students with higher levels of psychological well-being are less likely to engage in various forms of violence compared to those with lower levels of psychological health.

Heiligenstein and Smith (2006) conducted a study to investigate the relationship between smoking habits and psychological health issues in a specific group of university students. They used computer-connected devices to evaluate the seriousness of psychological symptoms, functional impairments, and professional, social, and personal abilities. The study found that regular smokers experienced decreased physical energy, increased psychological symptoms, and greater functional impairment, indicating the negative impact of smoking on the psychological well-being of students. Turner et al. (2007) conducted a study at Coventry University to investigate the prevalence of psychological disorders among university students. The findings revealed that 75% of the surveyed students reported experiencing anxiety, depression, or a range of personal, psychological, neurological, or emotional difficulties.

Additionally, the study revealed that students belonging to ethnic minority groups faced more psychological difficulties compared to their native peers. Furthermore, male students generally reported better psychological well-being than female students. Korhonen's longitudinal study (cited in Medical Portal, 2011) on French twins found that regular smokers had a higher risk of depression compared to non-smokers. Former smokers did not show any significant differences in depression levels compared to individuals who had never smoked. In a study conducted by Prochaska, Das, and Young-Wolff (2017), the researchers examined the association between smoking behaviour and psychological well-being. The results indicated a negative relationship between smoking and psychological health, suggesting that individuals who smoked more frequently had lower levels of psychological well-being, and vice versa.

Soet and Sevig (2006) conducted a survey on the psychological well-being of university students in Western America. The study revealed common problems among university students, including 20% experiencing despair, 6.1% dealing with eating disorders, 5.9% facing stress-related issues, and 4.2% managing attention deficit disorder with hyperactivity. Khalil (2003) conducted a study among Palestinian university students to examine the relationship between alienation and psychological health. The study found gender disparities in different aspects of psychological health. Females exhibited greater tendencies towards obsessive-compulsive disorder, reactive sensitivity, depression, anxiety, fear anxiety, and imaginative and psychotic paranoia. Moreover, students in humanistic faculties exhibited advantages in terms of differences in hostility and psychoticism. A significant positive correlation was found between alienation level and each dimension of psychological health.

Moreover, Shaqir's study (1995) at Tanta University, exploring self-concept and psychological health aspects among depressed students, revealed a statistically significant negative correlation between depression and self-concept. Results further highlighted substantial differences between genders concerning psychological health characteristics. Males displayed higher tendencies in aggression and reassurance, while females exhibited a higher inclination toward neuroticism. Speechley et al. (2009) conducted a study examining the association between psychological health and place of residence in the United States. The study's results indicated a discrepancy in levels of psychological well-being depending on one's residential status. Individuals residing in shelters demonstrated lower levels of psychological well-being, whereas those living independently exhibited higher levels. In addition, Al-Barawi (2001) conducted a study examining the association between psychological stress and variables such as gender, level of study, type of study, and place of residence. The study found significant variations in psychological stress levels based on differences in academic level and place of residence. No significant gender or study type differences were observed.

Nguyen (2008) investigated the influence of parental treatment patterns on the psychological well-being of Vietnamese adolescents who migrated to the United States. The study findings indicate that an authoritarian parenting style has adverse effects on children's psychological well-being, resulting in decreased self-esteem and increased levels of depression. Pollack (2004) investigated the relationship between parental communication, interaction with children, and their impact on positive psychological well-being and academic performance. The study found a positive correlation between parental relationships and children's psychological health, which in turn improved their academic performance. Puskar and Marie Bernardo (2007) conducted a study to investigate the impact of school nurses on students' psychological well-being and academic achievement. The study found a positive correlation between psychological health and academic achievement, indicating that higher levels of psychological health were linked to better academic performance.

In a study by Christopoulos (2018), the relationship between parents' marital adjustment and the psychological health of Bulgarian university students was investigated. The results indicated that students facing family issues exhibited lower levels of psychological well-being in comparison to those in harmonious family environments. In a research study conducted by Al-Sanaa (2002), the relationship between religiosity and general anxiety among students at Imam Muhammad bin Saud Islamic University in Riyadh was examined. The findings revealed a negative correlation between religiosity and general anxiety. Students from the College of Sharia demonstrated greater religiosity scores than students from the College of Social Sciences, whereas the latter group displayed higher average scores on the general anxiety scale.

Malinakova et al. (2020) conducted a study to examine the relationship between religiosity, specifically measured attributes, and mental health in a secular context. The study assessed religious affiliation, conversion experiences, non-religious attitudes, and the stability of these attitudes, along with mental health problems and anxiety levels. The study found that individuals who were classified as unstable non-religious or had undergone conversion experiences, especially those who perceived God as distant, were more likely to experience anxiety in close relationships and had a higher risk of poorer mental health compared to stable non-religious individuals. Nassif (2001) sought to examine the relationship between religious commitment and psychological security in a sample of students at Sana'a University while

considering multiple variables. The study identified a significant association between religious devotion and psychological well-being in student populations. Furthermore, the study revealed that there were no statistically significant variations in levels of psychological security when considering gender and specialisation.

Grøtan, Sund, and Bjerkeset (2019) conducted a study examining the relationship between mental distress, academic self-efficacy, study progress, and mental health help-seeking among students. Logistic regression analyses were employed to investigate these relationships. The study's results indicated that 17% of the students experienced significant psychological distress, a prevalence comparable to that observed among Norwegian students as a whole. Students experiencing severe mental distress had a significantly higher likelihood of reporting low academic self-efficacy and experiencing delayed study progress compared to students with fewer distress symptoms. Approximately 27% of students experiencing severe distress actively sought professional assistance, whereas 31% contemplated seeking help. The study found a significant relationship between symptoms of mental distress, academic self-efficacy, and academic progress.

3. Methodology

3.1 Study Population and Sampling

The study included all undergraduate students from Jordan who were enrolled in official Jordanian universities during the second semester of the academic year 2021-2022. Using a cluster randomization method, the study sample was obtained from a subset of four universities out of a total of ten. Each university included a total of 35 selected departments. Table 1 provides a comprehensive breakdown of the distribution of the study sample, categorised by university and gender variables.

Table 1

Distribution of Study Sample Participants by University and Gender Category

The number	Gender	Number of divisions	The University
169 211	Male Female	7	Jordanian
178 239	Male Female	8	Yarmouk
123 164	Male Female	5	Al-Bayt
135 201	Male Female	6	Muta
1420		26	Total

The sample was divided into two groups: the first group consisted of 300 male and female students, who were used for factor analysis and the evaluation of validity and reliability. The second group, consisting of 1121 male and female students, was recruited to investigate the research questions.

The researchers developed a psychological health scale by synthesising theoretical literature and prior studies. The initial version of the scale comprised 45 items, and its validity and reliability were assessed through the following procedures:

3.2 Validity

The primary concern for developers of psychological measures is construct validity. Studies employ different methods and procedures to validate scales, which can be broadly classified into three groups: Logical Analysis, Correlational Techniques, and Experimental Psychological Techniques, as outlined by Al-Sharifin and Al-Sharifin (2014). Correlational methods are notably prevalent among these options. AlAli and Al-Barakat (2022) outline several methods used to assess the validity of psychological scales, including factor analysis, trait matrix, multimethod matrix, and regression analysis. The validation procedures of the tool included logical methods and the use of correlational techniques. Logical validity was established by conducting theoretical analysis to define the concept of psychological health and its constituents. A group of nine experts in the fields of measurement, psychological counselling, educational psychology, and special education from King Faisal University conducted a thorough review of the items. They provided suggestions for revisions, which were subsequently accepted by the group. The recommendations included clarifying ambiguous language, removing specific items from the initial three dimensions, and adding items related to psychological safety (freedom from diseases). The finalized scale comprised 35 items distributed across four dimensions:

1. Feeling comfortable with oneself (psychological adjustment), covering items 1-8.
2. Feeling comfortable with others (social adjustment), encompassing items 9-15.
3. Ability to cope with life's challenges (problem-solving), including items 16-20.
4. Psychological safety (freedom from diseases), comprising items 21-35.

The validation procedures utilised correlational techniques to calculate correlation coefficients between item scores, dimension scores, and the total scale score. The purpose of these calculations was to assess the individual contribution of each item to both the specific subscale and the overall scale. Table 2 displays the correlation coefficients between item scores and the scores of relevant dimensions and the total scale.

Table 2

Correlation coefficients between the score on the item and both the score on the dimension and the score on the total scale

The correlation coefficient of the score with the scale	The correlation coefficient of the score with the dimension	Item	No.	Dimension
0.542	0.772	I feel content with myself.	1	comfortable with
0.579	0.746	I have confidence in my abilities.	2	oneself
0.510	0.680	I accept my Psychological abilities.	3	
0.407	0.619	Challenges drive me to greater success.	4	
0.485	0.601	Despite life's obstacles, I still find enjoyment.	5	
0.560	0.725	I have a strong belief in myself.	6	
0.399	0.573	I feel comfortable managing my desires and cravings.	7	
0.522	0.629	I experience a general sense of comfort and security in my life.	8	
0.422	0.638	I don't feel timid around others.	9	comfortable with
0.317	0.644	I feel at ease in crowded public places.	10	others
0.321	0.607	I feel secure in the company of others.	11	
0.327	0.616	I don't feel ashamed or uncomfortable interacting with the opposite sex.	12	

0.466	0.609	I am self-assured in social situations.	13	
0.300	0.514	I dislike being alone.	14	
0.418	0.544	I can easily make friends.	15	
0.435	0.728	I trust my abilities to achieve my goals.	16	cope with life's
0.505	0.791	I possess problem-solving skills and can face challenges.	17	challenges
0.374	0.786	The problems I encounter are my responsibility, and I am capable of resolving them.	18	
0.428	0.844	I rely on myself to address my challenges.	19	
0.377	0.690	I can cope with life's demands and overcome them.	20	
0.300	0.420	I hear voices that others don't.	21	Psychological
0.485	0.644	I experience sudden anxiety for no apparent reason.	22	safety
0.487	0.630	Unwanted thoughts repeatedly occur to me.	23	
0.369	0.499	I feel compelled to recheck some of my actions.	24	
0.350	0.460	I avoid visiting certain high places.	25	
0.409	0.486	I feel fearful in open spaces or on streets.	26	
0.515	0.647	I have uncontrollable mood swings.	27	
0.542	0.666	I undergo periods of panic for no reasonable cause.	28	
0.540	0.641	I feel inclined to cry.	29	
0.515	0.632	I sense others are observing or discussing me.	30	
0.593	0.624	I hold pessimistic views about the future.	31	
0.441	0.573	I experience an increase in heart rate and pace.	32	
0.659	0.703	I feel depressed.	33	
0.494	0.595	I hold a general distrust toward most people.	34	
0.439	0.563	My mood alternates between joy and sadness.	35	

The results in Table 2 indicate that all correlation coefficients are statistically significant (at the 0.01 significance level). Moreover, the correlation coefficients between the items and their respective dimensions consistently exceed their correlations with the overall tool. This pattern highlights the effectiveness of the items in accurately measuring the attributes represented within their respective dimensions and, as a whole, the entire scale. Pearson correlation coefficients were calculated to evaluate the relationship between the scores obtained on the tool and its dimensions. Additionally, correlation coefficients were computed to assess the relationship between the dimensions, as each dimension represents a unique facet of psychological well-being. Table 3 presents the correlation coefficients between the 35-item tool's final version and its different dimensions.

Table 3

Correlation Coefficients between the Tool and its Different Dimensions

Dimension	Psychological safety	comfortable with oneself	cope with life's challenges	comfortable with others	Total
Psychological safety	*	0.346*	*0.159	*0.190	*0.807
Comfortable with oneself		*	*0.507	*0.485	*0.749
Cope with life's challenges			*	*0.361	0.887
Comfortable with others				*	0.604

* Significant at the significance level 0.01

The statistical analysis of Table 3 reveals that the correlation coefficients between the dimensions, as well as between the dimensions and the instrument as a whole, exhibit

statistically significant values at a significance level of 0.01. Factor analysis was employed to analyse individuals' responses to the items of the Psychological Health scale, utilising the principal components method. The Eigen value, representing the latent root value, and the explained variance percentage were computed for each factor. Factors with an Eigen value greater than one underwent rotation using the orthogonal rotation method, specifically the Varimax rotation. The analysis revealed that the four factors accounted for a significant portion (42.6%) of the variance. This information is presented in Table 4, which displays the latent root values, the percentage of explained variance for each factor, the cumulative explained variance for each factor, and the number of items with the highest loadings on each factor.

Table 4

Eigen value, Percentage of Explained Variance, Cumulative Explained Variance, Number of Items loading with Factor, and Degree of Item loading with the Factor.

Extent of loading for an item on the factor	Items loading with Factor	Cumulative Explained Variance	Percentage of Explained Variance	Eigen value	Component
420 - 700	15	21.446	21.446	7,506	Psychological safety
570 - 770	8	32.715	11.269	3.944	Comfortable with oneself
690 - 840	5	37.930	5.215	1.825	Cope with life's challenges
510 - 640	7	42.586	4.656	1.630	Comfortable with others

Table 4 presents the manifestation of four factors that have been derived from the analysis, which correspond to the logical validity and theoretical comprehension of the concept of psychological health. The aforementioned factors explain 42.6% of the variability observed in individuals' scores on the psychological health scale. The initial factor, exhibiting a significantly higher eigenvalue of 7.506 in comparison to the subsequent factors, accounted for 21.446% of the overall variance. This observed percentage provides evidence for the existence of a prominent factor within the scale, aligning with Rechase's proposition that when the initial factor can account for a minimum of 20% of the variability, it signifies one-dimensionality (AlAli & Al-Barakat, 2022).

3.3 Reliability of the scale

The internal consistency of the scale was evaluated in its final version, which consisted of 35 items. The analysis indicated a significant level of consistency. The obtained Cronbach's coefficient alpha value of 0.92 indicates a high level of internal consistency. The reliability coefficients of the scale's dimensions were observed to be 0.90, 0.78, 0.88, and 0.91, respectively. While the aforementioned values are marginally lower than the overall internal consistency of the tool, they remain significantly high, thus indicating the robust internal consistency and reliability of the scale. Additionally, the reliability of the scale was established using the test-retest method. Following a period of three weeks, the scale was once again administered to a representative group of 40 students, comprising both males and females. The obtained Pearson correlation coefficient of 0.94 served to underscore the enduring consistency of the scale's outcomes across time. The significant coefficient observed in this context serves as evidence of the scale's strong and enduring stability. The coefficients pertaining to stability and internal consistency are presented in Table 5.

Table 5

Reliability and Internal Consistency Coefficients for the Entire Psychological Health Level Scale and Its Sub-Dimensions

Internal Consistency Coefficients	Test-retest reliability coefficient	Dimension
0.90	0.92	Comfortable with oneself
0.78	0.80	Comfortable with others
0.88	0.86	Cope with life's challenges
0.91	0.91	Psychological safety
0.92	0.94	Whole scale

3.4 Procedures Employed in the Study

1. The psychological health scale, comprising 35 items, was meticulously developed in alignment with the study's objectives, ensuring its validity and reliability were verified.
2. Official correspondence was acquired from the Department of Counselling and Educational Psychology, which is housed within the College of Education. Additionally, correspondence was obtained from the university presidency to the Ministry of Higher Education and Scientific Research, as well as to governmental universities. The purpose of this was to enhance the efficiency of the researchers' tasks.
3. The study sample was selected using cluster randomization, taking into account the variables of university and gender. Specifically, participants were chosen from a total of 10 universities, with a selection made from 4 of these universities.
4. Researchers collaborated with faculty members from randomly selected sections to clarify the purpose of the study. The students in the chosen population were informed about the study's significance and were reminded of the importance of providing sincere responses. They were assured that their answers would be used exclusively for scientific research. Furthermore, students were advised to provide honest responses considering the variability of individual characteristics.
5. The cumulative GPAs of the students were obtained by consulting the Admissions and Registration Department. The students were categorised into four groups based on their academic performance: Excellent, Very Good, Good, and Acceptable, following the university's classification guidelines.
6. Upon collecting and organizing the students' responses according to their achievement levels, the researchers reviewed the papers to identify any consistently typical answers. Subsequently, the collected data was entered into the computer system and analyzed using the statistical software SPSS.

3.5 Study Design and Statistical Processing

This study utilises a correlational design to investigate the influence of specific independent variables on the psychological well-being of university students, which serves as the dependent variable. To evaluate the association, we employed the stepwise multiple linear regression analysis method. This approach was used to identify the most influential variables in terms of their contributions to the variance of the dependent variable.

4. Findings

This section provides a detailed analysis of the statistical analyses performed to investigate the research questions. It specifically examines the influence of psychological, educational, and demographic factors on the mental health of university students in Jordan. The following results are presented in accordance with the research inquiries.

4.1 First: Findings Related to the First Inquiry

The evaluation of the psychological well-being of Jordanian university students is conducted in this study, with a focus on various variables (gender, residence, college classification, academic level, satisfaction with family harmony, academic achievement, religiosity level, and smoking). The findings of this assessment are presented in Table 6, which provides the means and standard deviations for the comprehensive psychological health scale.

Table 6

Mean Scores and Standard Deviations of Study Variables on the psychological Health Scale

Psychological Health Level	Standard Deviations	Mean	Variable Levels	Variable
Moderate	0.72	3.46	Male	**Gender**
Moderate	0.723	3.34	Female	
High	0.481	3.55	with family	**Residence**
Moderate	0.532	2.91	with friends	
Moderate	0.718	3.15	Alone	
Moderate	0.751	3.48	Scientific	**Collage**
Moderate	0.773	3.45	Humanity	
Moderate	0.627	3.22	first	**Academic level**
Moderate	0.648	3.28	second	
Moderate	0.662	3.32	Third	
Moderate	0.615	3.20	More than fourth	
High	0.812	3.62	High degree	**Satisfaction with family harmony**
Moderate	0.643	3.25	Moderate	
Moderate	0.834	2.85	Low degree	
High	0.718	3.53	excellent	**Level of academic achievement**
High	0.795	3.51	very good	
Moderate	0.699	2.97	good	
Moderate	0.734	2.80	acceptable	
High	0.521	3.51	Religious	**Religiosity level**
Moderate	0.683	2.95	To a low degree	
Moderate	0.415	3.01	Smoker	**Smoking**
High	0.690	3.50	Non-smoker	

An analysis of Table 6 reveals a conspicuous association between the variable with the highest mean score on the psychological health scale and the level of satisfaction with family harmony. Specifically, individuals who reported a higher level of satisfaction with family harmony exhibited a mean score of 3.62, accompanied by a standard deviation of 0.812. In contrast, those reporting a lower level of satisfaction with family harmony displayed the lowest mean score on the same scale, amounting to 2.85, with a standard deviation of 0.834. It is worth noting that, on average, male participants demonstrated slightly higher mean scores on the psychological health scale in comparison to their female counterparts, despite both groups manifesting a similar, average level of psychological health.

There is a noticeable difference in average psychological health between students living with their families and those living with colleagues. The former group tends to have higher psychological health, with an average score that is 0.59 points higher than the latter group. The average difference in scale scores between students attending scientific and humanities colleges has decreased to a marginal 0.03. Similar minimal disparities are also evident among students of different academic levels, with an average difference of 0.12. There is a discernible difference in the psychological well-being of first and fourth-year students in comparison to second and third-year students.

Significant variations exist in average psychological health scores based on the degree of satisfaction with family harmony. Significant variations are observed among students based on their academic achievements, with a notable difference of 0.73. Religious and non-religious students exhibit a similar trend, wherein religious students tend to have higher levels of psychological health compared to non-religious students, with an average difference of 0.56. Similarly, the group of individuals who do not smoke exhibits higher levels of mental health in comparison to their counterparts who smoke, leading to an average disparity in scores. In general, the students' psychological health level seems to be average.

4.2 Second: Findings related to the Second Inquiry

Is there a statistically significant association between the psychological well-being of university students in Jordan and various study variables (gender, type of housing, type of college, academic level, level of satisfaction with family harmony, level of academic achievement, level of religiosity, and smoking)? In order to address this inquiry, the calculation of simple correlation coefficients was performed between the categorical and ordinal variables, as well as the psychological health level. Kendall's Tau correlation coefficient was utilised for this purpose. Table 7 provides a comprehensive summary of the correlation coefficients pertaining to all variables.

Table 7

Correlation Coefficients between Psychological Health Level and Study Variables

Correlation Coefficient	Variable
0.319 *	**Gender**
0.325 *	Residence
0.108 *	Collage
0.088 *	Academic level
0.375 *	Satisfaction with family harmony
0.123 *	Level of academic achievement
0.346 *	Religiosity level
0.159 *	Smoking

* Significant at the significance level ($\alpha \leq 0.05$)

The correlation coefficients in Table 7 exhibited variability. The coefficients for certain variables, including satisfaction with family harmony, religiosity, type of housing, and gender, were greater than 0.30, while the remaining variables had coefficients below 0.16. After conducting a statistical analysis, it was determined that all of the coefficients in question are statistically significant at a significance level of $\alpha = 0.05$. The study revealed that there was a significant correlation between satisfaction with family harmony and

psychological health, accounting for 14% of the variance in each variable. In contrast, a shared variance of 0.7% was computed for the variable at the university level.

4.3 Third: Findings related to the Third Inquiry

The present study aimed to investigate the potential predictors of psychological health among university students in Jordan. Specifically, the study examined the influence of various study variables, including gender, residence, college, academic level, level of satisfaction with family harmony, level of academic achievement, level of religiosity, and smoking. To achieve this, a stepwise multiple regression analysis was conducted. The present study considered the dependent variable of psychological health level and employed the aforementioned variables as predictors. Table 8 presents the outcomes of the stepwise multiple regression analysis.

Table 8

presents the results of the stepwise multiple regression analysis. The increase in the squared correlation coefficients between the dependent variable (criterion) and the predictor variables, which explain the variance for the entire study sample.

F	F value to test the change in R^2	T	T-value to choose the regression coefficient	Change in R^2	Sum of Squares R^2	Standard regression coefficient	Unstandardized regression coefficient	Constant	Variables
0.000	216.453	0.000	8.156	0.146	0.146	0.184	12.154	114.059	satisfaction with family harmony
0.000	187.261	0.000	7.895	0.105	0.251	0.169	10.567		religiosity level
0.000	146.371	0.000	6.628	0.096	0.347	0.135	8.846		Residence
0.000	129.265	0.000	6.497	0.090	0.437	0.124	7.955		Gender
0.000	92.451	0.000	4.864	0.022	0.458	0.108	6.451		smoking
0.001	86.962	0.001	3.977	0.010	0.468	0.864	5.789		level of academic achievement
0.002	49.185	0.001	3.654	0.009	0.477	0.798	5.102		Collage
0.003	40.297	0.004	2.973	0.006	0.483	0.697	4.507		academic level

Table 9 displays the regression equation which includes the variables of family harmony satisfaction, religiosity level, residence type, gender, smoking, academic achievement level, college attendance, and academic level. Collectively, these variables explained a significant portion (0.483) of the variability in the mental health levels of Jordanian university students. This accounts for a significant proportion of the explanation. All variables made significant contributions to explaining the variation in students' mental health levels at a significance level below 0.05, with varying degrees of contribution.

The level of satisfaction with family harmony accounted for 14.6% of the variance, while religiosity accounted for 10.5%, type of residence accounted for 9.6%, gender accounted for 9%, and smoking accounted for 2.2%. Furthermore, the level of academic achievement accounted for 1% of the variance, while college accounted for 0.9% and academic level accounted for 0.6%.

From these results, we can derive the following standard linear regression analysis equation:

Y= 0.184 + 114.059 * Level of satisfaction with family harmony + 0.169 * Level of religiosity + 0.135 * Type of residence + 0.124 * Gender + 0.108 * Smoking + 0.864 * Level of academic achievement + 0.798 * College + 0.697 * Academic level.

5. Discussion of the Results

The study found that Jordanian university students generally exhibited an average level of mental health. This finding is consistent with previous studies conducted by Dalky and Gharaibeh (2019) and Chen and Martin (2007), which indicated that Chinese university students generally exhibited satisfactory mental health. In contrast, Sasaki's (2005) research findings reveal a significant disparity, indicating that 70% of students encountered symptoms of insomnia and depression. Additionally, studies conducted by Lauber et al. (2005) as well as Turner et al. (2007) underscore the prevalence of psychological challenges among university students, with three-quarters of them experiencing such issues.

Furthermore, it presents a contrasting viewpoint to the findings of Al-Khader's research conducted in 2004, which indicated a high level of mental health among students. This situation may be attributed to the timing of the study, which coincided with exams, a period known to cause psychological stress and increased occurrences of insomnia in students. Stressors can have adverse effects on the nervous and endocrine systems, potentially reducing an individual's psychological resilience. The large sample size may have caused individual characteristics to align with the average, which could explain this finding. Additionally, it is possible that the academic performance of students admitted to public universities during high school could have impacted their psychological well-being, potentially influencing the observed average outcome.

In addition, the correlation coefficients between mental health levels and different psychological, educational, and demographic variables were found to be small, ranging from 0.181 to 0.0964. These correlations were statistically significant at a significance level of 0.05. Regarding gender, the findings indicated a near equal average alignment between males and females, with males exhibiting slightly higher averages. Furthermore, a correlation between mental health status and gender was observed. This finding supports previous studies by Alshloul, Bdair, and Alalyani (2021), Hassan (2019), Rathnayake and Ekanayaka (2016), Turner et al. (2007), and Khalil (2003), which indicated that males generally exhibit higher levels of mental health compared to females.

In contrast to the findings of Chen and Martin (2007) and Al-Barawi (2001), this study demonstrates that Chinese university males have higher levels of mental health compared to females. Additionally, Al-Barawi (2001) found no statistically significant gender differences in mental health levels. The researchers hypothesise that the observed difference may be due to the considerable psychological stress encountered by female students. Female students experience monthly menstrual pressure, which includes physical and psychological symptoms such as anxiety, tension, and mood fluctuations. Furthermore, women frequently encounter role conflicts as they balance their duties as wives or mothers with household responsibilities while also meeting academic obligations. In addition, many residential areas may lack adequate charging infrastructure. In contrast,

a significant proportion of male students prioritise their academic pursuits during their time at university. Thus, male students experience psychological pressures primarily due to academic demands, which may explain their higher average score on the psychological health scale in comparison to female students.

The results also indicated that students living with their families had a higher average score on the psychological health scale. In contrast, students who lived in shared accommodations with friends (student housing) or lived alone exhibited an average level of psychological well-being. The results are consistent with previous studies conducted by Brett, Mathieson, and Rowley (2022), Speechley et al. (2009), and Al-Barawi (2001), which also reported significant variations in psychological well-being based on residential location. The researchers hypothesize that being part of a family may help reduce psychological stress associated with tasks such as food preparation, household chores, and other responsibilities that are less urgent in a family context. This arrangement may enhance academic focus by minimising distractions from social obstacles.

The study indicates significant variations in psychological well-being among students in scientific and humanities colleges. Both groups exhibited similar levels of psychological well-being. Furthermore, a statistically significant correlation ($\alpha = 0.05$) was found between the level of psychological health and the college variable, including its distinctions. The findings are consistent with Al-Barawi's (2001) study, which found no statistically significant differences in psychological well-being based on the field of study. In contrast to previous studies conducted by Mu, Du, and Hou (2022), Lauber et al. (2005), and Khalil (2003), our findings suggest that students enrolled in humanities colleges demonstrate higher levels of psychological well-being in comparison to their counterparts in scientific colleges. The variance in psychological health between scientific college students and humanities college students may be due to the higher level of confidence that scientific college students have in their academic pursuits. Additionally, students enrolled in scientific colleges may experience increased perceptions of potential career prospects, leading to enhanced self-confidence and decreased levels of anxiety. In contrast, students enrolled in humanities colleges may exhibit higher levels of self-assurance in their social skills.

The findings indicate that the psychological well-being of students across all academic years was of moderate level. Significant variations were noted between first-year and fourth-year students when compared to second-year and third-year students. Furthermore, a statistically significant correlation ($\alpha = 0.05$) was observed between the level of psychological health and the variable representing educational stage. This finding is consistent with the findings of Liu, Ping, and Gao (2019), Chen and Martin (2007), and Al-Barawi (2001), all of whom have demonstrated substantial differences in psychological well-being as a result of differing levels of education. The observed variations can be ascribed to the recent process of adjustment that new students undergo as they navigate and acquaint themselves with their unfamiliar surroundings. Moreover, individuals encounter various challenges associated with the disparities between university and school educational systems, as well as cultural differences between their previous upbringing environments and the novel academic settings. The combination of these factors collectively contributes to a potential decline in the psychological well-being of first-year college students.

Conversely, individuals in their fourth year of study may encounter unique stressors, such as reflecting on the forthcoming transition from their accustomed academic setting and apprehensions regarding job prospects. These factors can contribute to psychological strain and have implications for their mental well-being. The results of the study revealed that students who reported a high level of satisfaction with family harmony demonstrated superior psychological well-being in comparison to their peers. This observation is consistent with the findings of Mphaphuli (2023), Huang et al. (2019), the Pollack (2004), and the Nguyen (2008), indicating a positive correlation between parental harmony and the psychological well-being of offspring. The observed discrepancy in psychological well-being among university students may be ascribed to the physical separation these students maintain from familial conflicts or economic hardships within their households. On the other hand, students who express moderate or low levels of satisfaction with family harmony may experience heightened psychological stress as a result of frequent exposure to familial conflicts, which can have a direct impact on their mental well-being.

Individuals with excellent and very good academic achievements exhibited higher levels of psychological health, whereas those with good and acceptable academic achievement levels demonstrated moderate levels of psychological health. The results of this study are consistent with the conclusions put forth by Puskar and Marie Bernardo (2007) as well as Grøtan et al. (2019). These studies indicate that there exists a positive correlation between elevated levels of psychological well-being and improved academic performance. The results indicated a positive relationship between religiosity and mental health, including its various dimensions. Religious individuals demonstrated superior psychological well-being in comparison to their non-religious counterparts, consistent with previous studies in this field.

Koenig and Al Shohaib (2019) examined the inherent impact of religion on human existence, highlighting its function in structuring both societal and individual life through moral principles and laws. Adhering to Islamic teachings was believed to offer comfort and improve conduct. Previous research conducted approximately three decades ago revealed a notable correlation between religiosity and mental health. Experimental research has shown that religious individuals exhibit higher levels of mental well-being, life reassurance, optimism, and lower susceptibility to psychological pressures, depression, anxiety, and suicide attempts, in comparison to those who are less religious. These findings align with previous research conducted by Koenig and Al Shohaib (2019), who also found a positive association between religiosity and improved psychological well-being. Additionally, their study indicated that individuals with religious beliefs were less susceptible to experiencing depression. This is consistent with the findings of several studies conducted by Malinakova et al. (2020), Halama, Gasparikova, and Sabo (2013), Al-Sanaa (2002), and Nassif (2001).

The findings revealed a statistically significant correlation ($p < 0.05$) between the levels of psychological health and its dimensions among student smokers. Researchers frequently hypothesize that nicotine has stimulatory effects on the nervous system similar to those of caffeine, posing comparable risks. The act of smoking triggers the body's physiological stress response, leading to the release of anti-stress hormones that serve to preserve internal well-being and emotional equilibrium. The physiological response to smoking bears resemblance to the physiological response to psychological stress, yet it transpires

independently of the accompanying psychological factors. As a result, individuals who smoke commonly experience elevated cellular metabolic activity, heightened nervous tension, and a desire to smoke in order to regain their accustomed state. Nicotine cessation is associated with the emergence of mild depressive symptoms, heightened anxiety, and a pronounced desire to engage in smoking behaviour for the purpose of achieving a state of equilibrium. Over a prolonged duration, the habit of smoking chronically results in an elevated tolerance to nicotine, thereby diminishing the inherent physiological reaction to nicotine-induced psychological stress. Nevertheless, the adverse effects on pulmonary function persist and remain unaltered.

During the regression analysis, it was found that several variables had a significant impact (at a = 0.05) on the variation in mental health levels within the study sample. These variables, listed in order of their impact, were leisure time perception, smoking behaviour, religiosity level, gender, college type, and academic level. The combined influence of these variables explained 48.3% of the variability in mental health, indicating a significant contribution to comprehending and forecasting variations in psychological well-being among college students. This highlights the potential need to investigate additional variables, beyond those examined in this study, in order to fully understand the variations in psychological well-being among these students. The results of this study are consistent with previous research that suggests a connection between psychological well-being and certain variables. However, what sets this study apart is the stronger correlations that were observed. The findings indicate that the determinants affecting the mental well-being of Jordanian university students exhibit variations in their characteristics and relative significance among the participants under investigation.

6. Implications

Based on the findings of the study, the researchers propose both theoretical and practical suggestions. The team suggests further research to investigate and clarify the remaining differences in mental health levels among university students. Important variables to consider include the type of abuse experienced at various stages of life, academic performance in high school, family socioeconomic status, ability to manage time effectively, academic adjustment, conflicts in values, development of identity, self-affirmation, psychological and social adjustment, interactions with teachers and peers, as well as emotional difficulties during exam periods, among other factors. Additionally, they suggest conducting predictive research on mental health across different age cohorts.

In terms of practical applications, it is recommended that stakeholders in Jordanian universities prioritise the improvement of mental health among students. This aligns with the main objective of promoting a resilient personality and strong psychological well-being. In addition, media organisations should prioritise the development of religious and social programming aimed at addressing psychological distress among university students. The researchers suggest using the regression equation to predict the mental health levels of university students, due to the significant amount of variance explained by the identified variables.

6.1 Limitations and Future Research Directions

The limitations of this study arise from its narrow focus on a specific subgroup of students from public universities in Jordan, who were selected using cluster randomization. The generalizability of the findings depends on how well the sample of Jordanian university students represents the broader population. The assessment tool used in this study is a self-developed Psychological Health Scale. The generalizability of the results depends on the validity and reliability of the tool used, given that it is not a standardised measurement instrument. The study's findings are influenced by the concepts and terminologies outlined in the operational definitions. The results' applicability is limited by the scope and interpretation of these definitions.

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***Conflicts of Interest*:** No conflict of interest is declared by authors.

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