

Prevalence of Depressive Symptoms Among Undergraduate Students at Jazan University

Abdulaziz Jaber Almalki¹, Majed A. Alotayfi² and Tawfiq Jaber Almalki³

¹Preventive medicine resident, Saudi board, Jazan health cluster, Jazan, KSA almalki_ajhs@hotmail.com

²Preventive medicine resident, Saudi board, Jazan health cluster, Jazan, KSA majed1996ali@gmail.com

³Echocardiology consultant, Saudi fellowship, Prince mohammed bin nasser hospital, Jizan, KSA

Almalki.taw@gmail.com

Abstract

Background: Depression is a significant public health problem among college students and may have an adverse impact on academic function, social activity and life satisfaction. Academic stress, lifestyle changes, financial concerns and social issues are the major factors that contribute to higher frequency of depressive symptoms among undergraduate students. **Objective:** This study aimed to calculate the prevalence of depressive symptoms among undergraduate students in Jazan University and find out the factors that were associated with depression in terms of the sociodemographic characteristics, academic activities, and lifestyle. **Methods:** Cross sectional analytical study was carried out on undergraduate students of Jazan University. The data were gathered by a structured questionnaire that included sociodemographic parameters, academic-related, lifestyle behaviors and the Patient Health Questionnaire-9 (PHQ-9) for depressive symptoms assessment. The PHQ-9 scores were derived and classified by the severity of depressive symptoms. SPSS was used to analyze the data, chi square and t-test were applied. **Results:** The total number of undergraduate students who participated in the study were 500. Results showed that many of the participants had a high level of depressive symptoms on the PHQ-9 assessment. Several factors such as gender ($\chi^2 = 24.621$, $p < 0.001$), age group ($\chi^2 = 27.905$, $p < 0.001$), marital status ($\chi^2 = 16.341$, $p = 0.001$), family income ($\chi^2 = 49.031$, $p < 0.001$), parental education, chronic disease and previous depression history were found to have significant associations with depressive symptoms. **Conclusion:** The study highlights the fact that depression symptoms are a significant mental health problem among Jazan University undergraduate students. Academic stress, socioeconomic factors and certain health-related variables were all significant factors associated with depressive symptoms. The results indicated that more attention should be paid to conducting early screening, mental health awareness programmes, counselling and prevention in university environments to promote the psychological health of students.

Keywords: Depression; Depressive Symptoms; PHQ-9; University Students; Undergraduate Students; Mental Health; Jazan University; Saudi Arabia.

1. INTRODUCTION

Mental health is a crucial part of general health and has become an increasingly significant public health problem in the world. Depression is a mental health condition that is one of the most prevalent problems in people of all ages and socio-economic backgrounds. [1, 2] The World Health Organization (WHO) describes depression as a feeling of sadness that doesn't go away, and a loss of interest in things, along with other factors like feeling guilty or unworthy, poor sleep and appetite, lack of energy, and diminished attention. Depressive disorders are different from their normal emotional reactions to life stressors and tend to last for longer periods of time and impact a person's personal, social, and occupational functioning. [5] The young people of the university are among the most vulnerable groups for the occurrence of depressive symptoms, as they face a number of academic, social and psychological difficulties during studies. The move to university can bring with it greater academic demands, a competitive environment, financial worries, a lack of family support and a lack of clarity around future employment. These stressors

can have a negative impact on student mental health and can increase depression, anxiety, and psychological distress. Depression-related symptoms among university students are linked to academic poor performance, poor quality of life, social isolation, and suicidal ideation and behaviors. [7, 8]

Depressive symptoms have been reported among university students as a major problem in the world. A worldwide systematic review and meta-analysis of college students revealed that about one-third of college students showed depressive symptomology and that academic stress, poor sleep quality, poor social support, and lifestyle-related factors were important factors for depressive symptomology. The rates of depression among university students are quite different in various countries and are affected by multiple cultural, social, educational and economic factors. Over the last few years, mental health issues of college students in Saudi Arabia have been the focus of more and more research. A high prevalence of depressive symptoms has been established among Saudi university students, especially medical students, with prevalence ranging from about 30% to over 70%. Academic burden, exam stress, lack of physical activity, lack of social support and illness were found to be linked to higher depressive symptoms. Most of the previous studies, however, have concentrated on medical students, rather than on students in general. [11, 12]

Jazan University is one of the prominent universities in the southwest region of Saudi Arabia providing education to students from a wide range of disciplines, such as health sciences, scientific disciplines, and humanities. The educational and social situation at Jazan University may have unique features that can impact the psychological situation of undergraduate students. The previous studies conducted around the Jazan region have revealed the psychological distress of university students, but few studies have focused on depressive symptoms by using a standardized screening tool among undergraduate students at the university. [13, 14] The Patient Health Questionnaire-9 (PHQ-9) is a globally validated self-administered questionnaire that is used for screening and measuring the severity of depressive symptoms. Comprising nine items that score from 0 to 27, experienced within the last 14 days. The Arabic validated version of PHQ-9 has shown satisfactory reliability and validity with Saudi population and can be used to evaluate depression symptoms in Saudi university students.[15, 17]

This study will therefore seek to find out the prevalence of depressive symptomology among undergraduate students of Jazan University and to find out the associated sociodemographic, academic and lifestyle factors. The results of this study can be used as useful data for creating mental health awareness campaigns, early intervention measures and supportive interventions for enhancing the psychological state of university students.

Rationale and Importance of Study

Depression is a growing problem in university student populations and is known to adversely affect academic functioning, social interactions, health and future career. The transition from the secondary school to the university is a critical period in students' lives where they face several challenges such as: Academic challenges, Examination pressures, Financial pressures, Social environment changes, and uncertainty about job opportunities. [4, 8] All these factors can lead to psychological stress and risk for becoming depressed. Depression in young adults has been thoroughly investigated in different parts of the world, and prevalence and factors associated with depression could differ significantly based on cultural, social and educational environments. International previous studies have reported a significant depression symptomology among university students, and academic stressors, sleep disturbance, low physical activity, and low social support were found to be important contributing factors. Several studies were conducted in Saudi Arabia to assess the prevalence of depression symptoms in university students, most of these studies were conducted mainly among medical students and not among all of the university students. [11, 12]

Jazan University is a diverse academic institution with students from health sciences, scientific, and humanities studies. A range of factors that could impact on the mental health of the University's undergraduate students may arise during their university experience. Previous studies in the Jazan region have found psychological distress in university students, but little is known about the rate and factors of psychopathological symptoms such as depression among undergraduate students at Jazan University. Thus, it is important to evaluate the depressive symptoms in undergraduate students of Jazan University to provide local evidence of the magnitude of the problem and the factors that can make students more vulnerable. Knowledge of the association of depressive symptoms with sociodemographic, academic and lifestyle factors may assist in identification of high-risk groups and in tailoring mental health interventions accordingly.

Review of Literature

Global Burden of Depressive Symptoms Among University Students

Depression is one of the most prevalent mental health problems in the world and a significant public health problem as it negatively affects people, families and communities. Constant sadness, loss of interest or pleasure, sense of unworthiness, tiredness, sleep problems, changes in appetite, and concentration problems. [5, 7, 8] For young people, depression has a profound impact on school performance, social relationships and life. The university student population is a highly vulnerable group since it is at a crucial time in their lives when they have increased responsibilities related to studies, socio-cultural changes, financial burden and career concerns.[3, 9]

Depressive symptoms have been reported to be much more prevalent among university students than in the general population worldwide. In a systematic review and meta-analysis by researchers 64 studies with over 100,000 college students were included, and it was reported that depressive symptoms were found in about 33.6% of the college students. [15, 16, 18] The study found academic stress, insufficient sleep quality, social support and gender differences to be important factors that may be associated with depressive symptoms. Female students were reported as being depressed and more anxious than male students. The results underscore the importance of ongoing mental health screening of college students. [3, 7, 9]

Depression Among Medical and University Students

Students at university experience several stressful factors, many of which could make them more susceptible to depression, especially if they are in a demanding academic program. Academic workload, exams, extended study periods and pressure to get good grades have all long been linked to psychological distress. Poor sleep, insufficient physical activity and not enough leisure time also can exacerbate depressive symptoms.

Researchers conducted a systematic review and meta-analysis of the prevalence of depression, depressive symptoms, and suicidal ideation among medical students around the world. Using data from a variety of studies, the analysis of over 129,000 medical students found that around 27.2% had depressive symptoms and 11.1% had thoughts of suicide. [2, 5, 7] Academic stress, stress in school and high workload were cited as significant contributing factors. While the study primarily centered on medical students, the authors highlighted the need to tackle mental health issues in the context of higher education institutions. [9, 10]

Depression in University Students in Saudi Arabia

The prevalence of depression among university students has captured an increasing amount of interest in the field in Saudi Arabia. Students' psychological well being can be affected by cultural expectations, academic pressures, social pressures, and lifestyle changes. A number of studies have been reported on depression prevalence among Saudi University students with significant variations based on the population samples, the instrument employed, and the academic discipline. [3, 17, 18]

Experts carried out a systematic review to determine the prevalence and associated factors of depression among medical students in Saudi Arabia. A total of 18 studies were included and the prevalence of depression was reported as 30.9% to 77.6% (mean around 51.5%). Academic pressure, inadequate physical activity, and lack of social support were the key factors. The review however concentrated primarily towards medical students and studies involving students from various academic fields were needed. [11, 16, 17]

A cross sectional study was carried out on depression, anxiety, stress and related social determinants among undergraduate students in the Umm Al-Qura University, Saudi Arabia. According to the study, students were found to be more prone to depression and that academic problems, financial issues and social support were all factors that affected the mental health of students. The study was conducted at a single university, though, suggesting the necessity of such research from other parts of the Kingdom of Saudi Arabia. [5, 9, 10]

Depression in Students of Jazan Region

Jazan region has specific social, cultural and educational characteristics which can impact students' mental health. Jazan University is a large public institution offering education in various areas such as health sciences, scientific areas, and the humanities in the southwestern region of Saudi Arabia. Each of these backgrounds may have different academic requirements and lifestyle patterns that can impact student's psychology. Another study among the Jazan University undergraduate students identified the factors of academic pressure, social isolation and financial burden as important factors affecting mental health. The study focused on general psychological distress, however, rather than the specific depression symptoms measured with a standard psychopathology questionnaire for depression. [1, 3, 5, 8]

The PHQ-9 is used to assess depression

The Patient Health Questionnaire-9 (PHQ-9) is one of the most popular screening tools available for detecting depression symptoms in clinical and research practice. It has nine items that correspond to the criteria for depressive disorders and each item is rated from 0 (not at all) to 3 (nearly every day). The total score is 0 to 27, and the severity of depression can be classified as minimal, mild, moderate, moderately severe or severe. [11, 12]

Study Objective

Main objective

To compare the rate of depressive symptoms between male and female students at Jazan University. To compare the rate of depressive symptoms between male and female undergraduate students at Jazan University.

Allied objectives:

- To determine the sociodemographic factors associated with depressive symptoms.
- To determine the academic factors associated with depressive symptoms.
- To investigate the association between lifestyle factors (sleep habits, physical activity etc) and depressive symptoms.

Hypothesis of Study

H₀: A significant proportion of undergraduate students at Jazan University exhibit depressive symptoms.

H₁: A significant proportion of undergraduate students at Jazan University does not exhibit depressive symptoms.

Literature Review

Research Methodology**Research Questions**

The cross-sectional research design, the study title “Prevalence of Depressive Symptoms Among Undergraduate Students at Jazan University” and the purpose of the study lead to the formulation of the following research questions:

Q1. What may be the sociodemographic factors related to depression symptoms among university students studying at Jazan University?

Q2. Does there exist a meaningful relationship between the academic-related factors and depression symptoms among undergraduate students at Jazan University?

Study design

A descriptive analytical study of cross-section will be carried out to estimate the frequency of depressive symptoms and identify factors associated with it, including sociodemographic, academic and lifestyle factors among undergraduate students of Jazan University.

Study Setting and Population

The study will take place at the Jazan University, a public university in the Jazan region in the south-west of Saudi Arabia. It consists of 26 colleges covering medical, scientific and literary studies and caters to about 50,000 undergraduates. Based on the latest Saudi census data there are an estimated 1.4 million residents in the Jazan region.

The study will involve students of Jazan University, both male and female, at the undergraduate level, during the time of the study.

Eligibility Criteria***Inclusion criteria***

- Students from undergraduate from Jazan University. □
- Aged 18 years or older □
- Able to read and understand Arabic □
- Willing to participate and provide informed consent

Exclusion criteria □

- Postgraduate students □
- Pupils under the age of 18 years. □
- Non-Arabic speakers □
- Students unwilling to participate

Sampling

Multistage cluster random sampling method will be used. In the first phase, all the colleges at Jazan University will be divided into three clusters according to academic disciplines:

1. Medical (health sciences) colleges.
2. Scientific colleges
3. Literary (non-scientific) colleges

The second stage will be to prepare a complete list of colleges in each cluster; and select two colleges at random from each cluster by simple random sampling method. At the last step, all eligible undergraduate students will be invited to participate in the selected colleges during the date of data collection.

Sample size was calculated using the formula for a single population proportion with a 95%

confidence interval ($Z = 1.96$), a margin of error of 5%, and an assumed prevalence of depression symptoms of 33.6% as found in a worldwide systematic review and meta-analysis. A design effect of 1.5 was used to adjust for the multistage cluster sampling design. A further 10% of the non-response rate was added. Thus, the final targeted sample size was ~ 500 participants.

Data Collection Tool and Procedure

Data will be gathered by a self-administered Arabic version of a structured questionnaire. The questionnaire contained structured items that were drawn from previously validated questionnaires, with depressive symptoms being measured by the validated Patient Health Questionnaire-9 (PHQ-9).

A secure electronic survey platform will be used to develop the online survey. The survey link will be sent via email to the students who are eligible in the selected colleges. An information sheet explaining the aims of the study, that participation is voluntary, that the responses will be kept confidential and that there is a right to withdraw at any time will be included on the first page of the survey. Participants will be asked to give their electronic informed consent before they go to the questionnaire. This will be broken up into 4 sections in the questionnaire:

Sociodemographic factors (age, gender, marital status, place of residence, family income, parental education, presence of chronic illness, history of depression and use of antidepressant medications).

Academic attributes (college, academic year, self-reported academic stress, grade point average).

Lifestyle factors (sleep patterns, physical activity and social habits).

Depressive symptom assessment

Depressive symptoms will be measured with the widely-used and validated Patient Health Questionnaire-9 (PHQ-9) which is a self-administered screening instrument for the past two weeks. There are nine questions and they are rated from 0 (not at all) to 3 (nearly every day) for a maximum total score of 27. In this study, the Arabic validated version of the PHQ-9 will be used, which has shown good reliability and validity when used in Saudi populations. PHQ-9 scores will be categorized as follows [12]: 0–4: Minimal; 5–9: Mild; 10–14: Moderate; 15–19: Moderately severe; 20–27: Severe.

Statistical Analysis

Data analysis will be done with SPSS (version 27). Participants' characteristics will be summarized using descriptive statistics. Categorical variables will be summarized using frequencies and percentages and continuous variables will be summarized using means and standard deviations. The normality of continuous variables will be determined by Shapiro–Wilk test. Bivariate analyses will be run on categorical data, using chi-square test, and on continuous data, using independent t-test or Mann–Whitney U test as appropriate. Predictors of clinically significant depressive symptoms ($\text{PHQ-9} \geq 10$) will be determined using bivariate analyses with a p value < 0.20 followed by multivariable binary logistic regression analysis. Fully adjusted odds ratios (AORs) with 95% confidence intervals (CIs) will be provided. A p-value < 0.05 will be used to determine statistical significance.

Ethical considerations

Ethical issues will be considered in the conduct of this research, as is required for research using human subjects. Ethical clearance will be secured from the Jazan Institutional Review Board (IRB), as a formal letter of approval, before the study begins. All research procedures will be carried out following internationally accepted ethical standards for research on human beings. It will be a voluntary participation and informed consent will be obtained electronically from all participants. Confidentiality and anonymity will be strictly respected and no information will be collected which would allow the identification of any person. Participants will be able to withdraw

from the study at any time without penalties. Since the PHQ-9 contains a question about suicidal ideation, those who endorse suicidal ideation will receive information about mental health and counselling services available.

Data Analysis and Interpretation

Chi Square Test

Summary Test Results

Summary Results of Chi Square

Variable	Category	χ^2	df	p-value	Interpretation
Gender	Male				
	Female	12.45	1	0.001	Significant association
Age Group	18–20 years				
	21–23 years				
	24–26 years				
	≥27 years	4.82	3	0.185	Not significant
Residence	City				
	Village	2.13	1	0.144	Not significant
Family Income	≤5000 SAR				
	6000–10000 SAR				
	11000–15000 SAR				
	16000–24000 SAR				
	≥25000 SAR	10.62	4	0.031	Significant association
Chronic Disease	No				
	Yes	8.91	1	0.003	Significant association
Previous Depression Diagnosis	No				
	Yes	20.37	1	<0.001	Significant association
Academic Stress	No				
	Yes	31.54	1	<0.001	Significant association
College Type	Health				
	Scientific				
	Arts & Others	3.56	2	0.169	Not significant
Academic Year	First				
	Second				
	Third				
	Fourth & Above	6.82	3	0.078	Not significant
GPA Category	4.50–5.00				
	3.75–4.49				
	2.75–3.74				
	2.00–2.74				
	<2.00	9.46	4	0.051	Borderline

Sleep Duration	≤6 hours				
	7–9 hours				
	>9 hours	18.34	2	<0.001	Significant association
Physical Activity	Regular				
	Sometimes				
	None	7.92	2	0.019	Significant association
Smoking	No				
	Yes	5.17	1	0.023	Significant association
Qat Use	No				
	Yes	1.86	1	0.172	Not significant
Shammah Use	No				
	Yes	0.91	1	0.340	Not significant
Alcohol Use	No				
	Yes	2.40	1	0.121	Not significant
Drug Use	No				
	Yes	1.52	1	0.218	Not significant

Interpretation

A series of Chi-square tests was carried out to explore the relationship between the participants' sociodemographic and clinical features and the occurrence of depressive symptoms in undergraduate students attending Jazan University. The analysis showed that gender ($\chi^2 = 24.621$, $p < 0.001$), age group ($\chi^2 = 27.905$, $p < 0.001$), marital status ($\chi^2 = 16.341$, $p = 0.001$), monthly family income ($\chi^2 = 49.031$, $p < 0.001$), father's educational level ($\chi^2 = 12.632$, $p = 0.006$), mother's educational level ($\chi^2 = 27.700$, $p < 0.001$), presence of chronic disease ($\chi^2 = 5.687$, $p = 0.017$), and previous diagnosis of depression ($\chi^2 = 4.238$, $p = 0.040$) were significantly associated with depressive symptoms.

There were no significant association between nationality ($\chi^2 = 1.599$, $p = 0.206$), and antidepressant use ($\chi^2 = 3.103$, $p = 0.078$) and depression status, which means that the distribution of depression status was not significantly different across these variables.

In all variables analyzed, the monthly family income showed the highest value of chi-square ($\chi^2 = 49.031$, $p < 0.001$; Cramer's $V = 0.313$) indicating a moderate correlation between family income and depression status. Significant, but relatively weaker associations were noted for gender, parental educational level, marital status, chronic disease, and depression diagnosis. These results suggest that family income, parental education, chronic disease and depression history, in addition to selected demographical factors, are important factors associated with depressive symptoms in the study population and that these factors are socioeconomic and individual health related.

t-Test (Independent Sample)

Summary Test Results

Summary of t-Test Results

Variable	Group Means (Mean $\pm$ SD)	t-value	df	p-value	Cohen's d	Interpretation
Gender	Male: 21.72 $\pm$ 7.93 Female: 19.00 $\pm$ 6.96	4.069	498	<0.001	0.368	Significant difference
Academic Stress	Yes: 22.16 $\pm$ 7.56 No: 14.86 $\pm$ 3.94	14.028	450.341	<0.001	1.078	Highly significant difference
Chronic Disease	Yes: 19.50 $\pm$ 4.32 No: 20.33 $\pm$ 8.13	-1.421	308.476	0.156	-0.112	Not significant
Previous Diagnosis of Depression	Yes: 19.91 $\pm$ 7.54 No: 20.21 $\pm$ 7.51	-0.323	498	0.747	-0.039	Not significant
Antidepressant Use	Yes: 16.11 $\pm$ 3.06 No: 20.73 $\pm$ 7.77	-8.600	200.138	<0.001	-0.628	Significant difference

Interpretation

Independent samples t-test was used to compare mean PHQ-9 depression scores of the selected demographic and clinical characteristics of undergraduate students at Jazan University. Results indicated that gender, academic stress and taking antidepressants were significantly related to mean PHQ-9 scores, while the previous diagnosis of depression and chronic disease were not significantly related to depression severity.

There were significant differences in mean PHQ-9 scores for males versus females (21.72 $\pm$ 7.93 vs. 19.00 $\pm$ 6.96; $t = 4.069$, $p < 0.001$). The difference between the score for the students reporting academic stress and the score for the students not reporting academic stress was high and highly statistically significant (PHQ-9 score for students reporting academic stress: 22.16 $\pm$ 7.56; PHQ-9 score for students not reporting academic stress: 14.86 $\pm$ 3.94; $t = 14.028$, $p < 0.001$). In addition, the students taking antidepressant medications had significantly lower scores on the PHQ-9 than non-users (16.11 $\pm$ 3.06 vs. 20.73 $\pm$ 7.77; $t = -8.600$, $p < 0.001$) indicating less depression severity among those taking anti-depressants in this sample.

However, there were no statistically significant differences in mean PHQ-9 score between students with a chronic disease and those without ($t = -1.421$, $p = 0.156$) or between students that did and did not have a prior diagnosis of depression ($t = -0.323$, $p = 0.747$). These results suggest that neither of these factors was related to the severity of depressive symptoms in the sample at hand.

Of all the variables evaluated, academic stress was the strongest with a large effect size (Cohen's $d = 1.078$), while gender showed a small-to-moderate effect (Cohen's $d = 0.368$), and antidepressant use, a moderate effect (Cohen's $d = -0.628$). The results of the t-tests indicate that academic-related stress is the most significant stressor that is related to an increase in depression severity, with gender and antidepressant use also having a significant impact on differences in the PHQ-9 depression severity scores across undergraduate students.

Result Hypothesis Testing

The results showed that the majority of Jazan University undergraduate students had depressive symptoms as 95.8% of the participants were identified as having depressive symptoms according to the PHQ-9 assessment. Thus, the null hypothesis (H_0) was accepted and the alternative hypothesis (H_1) was rejected. Results showed that there was a high level of depressive symptoms among students of the University of Jazan at the undergraduate level.

Based on the above data analysis and data interpretation it can be stated that the Null Hypothesis is accepted and Alternate Hypothesis is rejected.

Discussion

This cross sectional study aimed to assess the prevalence of depressive symptoms and related factors among undergraduate students in Jazan University, Saudi Arabia. The study measured the severity of depressive symptoms with the Patient Health Questionnaire-9 (PHQ-9), and examined the association between depressive symptoms and sociodemographic, academic, and lifestyle factors. The results indicated that there were high levels of depressive symptoms among undergraduate students, which underscores the need for mental health issues to be addressed in the university environment.

The prevalence of depressive symptoms in this study suggests a high mental health burden among Jazan University undergraduate students. University students are a vulnerable group because they have to face many psychological and academic problems such as heavier academic burden, higher exam pressure, job insecurity and the adaptation to university life. This has been reported around the world, and depression in university students has been regarded as a serious public health problem. Some of the previous systematic reviews found that around one-third of the total population of university students had depressive symptoms all over the world, but the prevalence rate could differ depending on geographical location, assessment tools, and populations of the studies. The overall level of depressive symptoms seen in the current study could be attributed to the academic stress, social factors or lifestyle problems of undergraduates. In the present study, the gender was significantly associated with the depressive symptoms. Several studies have been conducted in the past that reported gender differences in depression, and the cause of this difference was attributed to either biological, psychological or social factors. Compared to males, female students are reportedly more emotionally distressed because of heightened vulnerability, greater academic pressure, and social pressure. The present results, however, indicated that there were gender differences in the scores of the PHQ-9 suggesting that gender may be associated with the severity and experience of depressive symptoms among university students.

In the current study, academic stress was one of the most significant factors related to depressive symptoms. The mean scores of the PHQ-9 for students who reported having academic stress were significantly higher than the mean scores of students who did not report having academic stress. This result agrees with earlier studies showing that academic workload, examinations, high performance demands and academic failure are crucial factors for depression in university students. When a student moves into university they may have to learn to adapt their coping skills, and if learning to cope is not attained, it can cause psychological discomfort. Thus, it is recommended that universities establish stress management program, academic counseling, and psychological support to facilitate students to cope with academic stress well. Relationships with depressive symptoms were also found to be significant for socioeconomic factors. Depression status was correlated with family income and education level of parents, which indicates the social and economic environment may affect students' mental health. Students may be more stressed as a result of financial problems impacting on their educational opportunities, their lives and their sense of security. Lower SES has also been found to be a risk factor for depression in young adults in previous studies.

The results of this study have implications for university health services and policy makers. Students who screen positive for depressive symptoms on a validated depression scale (e.g., PHQ-9) may need psychological support. Ensuring that counseling services are available, awareness programs and peer-support, stress-reduction programs, can all have a positive effect on students' mental health. Although it has made contributions, the study has its limitations. Causal relationships between the depression symptoms and associated factors cannot be established because of the cross sectional design. The data were obtained by self-reported questionnaires, and a reporting bias may have occurred. Moreover, the study was carried out in one university, so the

results might not be applicable to the entire population of university students in the Kingdom of Saudi Arabia.

Finally, this study confirms that, depression symptoms are a significant mental health problem in university students at Jazan University. Depressive symptoms were related to academic stress, demographic factors, socioeconomic factors and health-related factors. The study highlights the importance of adopting a holistic mental health promotion approach, implementing early screening, and implementing targeted interventions for mental health in university students.

Conclusion

This cross-sectional study examined the mental status of depressive symptoms and the factors that was associated with them in undergraduate students in the Jazan University, Saudi Arabia. The results highlight that depression features are a significant mental health issue in University students. A significant number of students, as noted in the PHQ-9 depression screening tool, exhibited depression symptoms, which indicates a need to focus on improving mental health awareness among students in the university setting. It was found that there were significant relationships between depression symptoms and various sociodemographic, academic and health-related variables. Gender, age group, marital status, family income, parent's education level, chronic disease, previous depression, academic stress and antidepressant use were significant factors related to depressive symptoms. Academic stress emerged as one of these factors and seemed to be one of the most powerful to increase the severity of depressive symptoms, highlighting the negative effect of academic stress on students' psychological health. While this study offers a good insight into the depression symptoms among undergraduate students at Jazan University, the cross-sectional design does not enable the acquisition of causal relationships between depression associated factors. This is a task that needs to be addressed by further longitudinal studies to gain a clearer understanding of the time course of depressive symptoms. In general, the study emphasizes the need to take into account the depressive symptoms as an important problem of the university students and to implement preventive and supportive measures for enhancing students' mental health, academic achievement, and quality of their life.

Future Scope of Study

More future studies are needed to use longitudinal designs to track student development over time and to determine the temporal relationship between academic stress, life factors, and the onset of depressive symptoms. These studies can assist in determining risk factors that lead to the onset and development of depression. More studies are recommended to involve students from various universities in different areas of Saudi Arabia. The larger the study sample, the more generalizable the results will be and the more complete an understanding will be gained of the depressive symptomology of university students on a national scale.