

Prevalence of Psychological Distress Among Undergraduate Students at Jazan University: A Cross-Sectional Study

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Abstract

Background: Undergraduate learning is a sensitive and challenging period for students and has been reported to result in high rates of psychological distress in them.

Objectives: To determine the prevalence of psychological distress among undergraduate students at Jazan University, Kingdom of Saudi Arabia.

Materials and Methods: A cross-sectional study was conducted among a stratified sample of 500 undergraduate students from five faculties at Jazan University. All participants completed an anonymous, self-administered questionnaire, which included questions about their sociodemographic details and a measuring scale of general psychological distress, the Brief Symptom Inventory-18 (BSI-18).

Results: A total of 450 students satisfactorily completed the questionnaire. Of these, 139 (30.9%) were screened positive for psychological distress based on the BSI-18 scale. Females scored significantly higher than males on the somatization ($P = 0.002$) and anxiety subscales ($P = 0.006$) as well as on the total symptom scale (the General Severity Index; $P = 0.005$). However, there was no significant difference between males and females regarding the depression subscale ($P = 0.149$). Twenty-eight students (6.2%) reported moderate to extreme levels of distress due to suicidal thoughts in the past 1 week before inclusion in this study.

Conclusions: This study found that ~31% of undergraduate students at Jazan University are psychologically distressed. This finding necessitates the need for rigorous efforts to develop proper screening and intervention programs targeting this population.

Keywords: Brief Symptom Inventory-18, mental health problems, psychological distress, Saudi Arabia, undergraduate, university students

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INTRODUCTION

For the past 10 years, mental health problems have been among the 11 leading causes of reduced quality of life and disability in Saudi Arabia.^[1] People affected by psychological distress are at an increased risk of poorer general health, morbidity and mortality.^[2] Globally, many studies have reported high rates of mental health problems

among undergraduate students aged 18–24 years.^[3-10] For instance, in a sample of 1557 Irish university students, the prevalence of psychological distress was found to be 41.9%.^[11] Psychological distress is a broad concept that comprises, besides mental disorders, other mental health problems that may not fall into the typical diagnostic criteria.^[12] Mental health problems have implications for many aspects of health, including academic achievement,^[13]

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social relationships, future employment,^[14] substance abuse and marital life.^[15]

Flatt^[16] has discussed many risk factors that may play an important role in the development of psychological distress among university students. These factors include academic pressure, financial burden, female gender, overuse of technology and limited accessibility to higher levels of education for students belonging to minority groups. Some studies reported other risk factors, such as family functioning,^[17] rurality^[8,18] and housing condition.^[19] However, it has been suggested that risk factors of psychological morbidities among students may differ between cultures.^[20] Studies that included Saudi samples have indicated that female students, medical students and those with financial, personal^[10] or emotional problems^[21] were more likely to report mental health problems such as depression, anxiety and stress.

Depression, anxiety and stress are the most common forms of psychological distress among university students. For example, a study of 1617 Turkish university students found that 27.1% had depression, 47.1% had anxiety and 27% had stress.^[18] Consistently, a study of 506 undergraduate students from four public universities in Malaysia estimated the prevalence of moderate depression, anxiety and stress to be 27.5%, 34% and 18.6%, respectively.^[8] Moreover, higher estimates of depression (60.8%) and anxiety (64.3%) were reported in a study that included 442 medical students from Fayoum University (Egypt).^[9]

Although psychological distress is highly prevalent among undergraduate students, this issue has not sufficiently been investigated in the Saudi population.^[22] Most recent studies on this topic have only included medical students.^[21,23-26] Remarkably, in a large sample of 1696 students from 10 colleges at King Faisal University, Amr *et al.*^[10] found that 24.4% of the students had symptoms of depression, 4% had panic symptoms and 14% had generalized anxiety symptoms. In addition, 1.1% of the students were found to have suicidal thoughts in the past month before inclusion in the study.^[10]

Undergraduate learning is a sensitive period in students' life, as they cope with the social and academic demands in their preparation for future careers.^[18] Therefore, it is important to estimate the prevalence of psychological distress and accordingly develop intervention methods. The present study aims to investigate the prevalence of psychological distress among undergraduate students at Jazan University, Kingdom of Saudi Arabia. The findings of this study would contribute to the current understanding of the

psychological problems among young adult students and their correlates, which would be essential for developing efficient screening and intervention programs to prevent psychological problems in this population.

MATERIALS AND METHODS

This is an observational, cross-sectional survey targeting students from five colleges at Jazan University, Kingdom of Saudi Arabia. The colleges included were Applied Medical Sciences, Pharmacy, Business Administration, Computer Sciences and Sciences.

First, the sample was stratified according to the three sectors, namely, health-related faculties, arts faculties and other scientific faculties. Second, faculties were selected randomly from each sector and, finally, clusters of classes were randomly selected from each stratum. A sample of 500 participants was calculated for the current study. The formula for a cross-sectional study, $n = ([z_{\alpha}^2 \times p \times q]) / d^2$, was used to calculate the sample size, where $z_{\alpha} = 95\%$ confidence interval, $p =$ prevalence of knowledge 50%, $q = 1 - p$, $d =$ error $\leq 5\%$ and a 25% nonresponse rate. To adjust the number of students in each faculty, probability proportional to size sampling was used.

The structured questionnaire was written in Arabic and distributed by six medical students to the study population in their faculties. After explaining the purpose of the study and obtaining verbal consents, data collectors waited somewhere nearby for the completion of the questionnaire without supervising the participants. The data collection process took place in the period from 22 to 29 March 2017.

The questionnaire consisted of questions regarding respondents' demographic details, such as gender, age, faculty type, family income and residence, and the Brief Symptom Inventory-18 (BSI-18) as a measuring scale for general psychological distress. The author translated the BSI-18 items into simple Arabic using back translation.

BSI-18 is a self-report scale that has been used to assess psychological distress in different populations, including high school^[27] and undergraduate students,^[28] and has been shown to have excellent internal consistencies (Cronbach's alpha ranging from 0.90 to 0.99).^[29] It is the briefest and most recent version of instruments designed by Derogatis and Savitz.^[30] BSI-18 differs from its predecessors by comprising only three subscales, namely, somatization, depression and anxiety, with six items in each subscale. These three dimensions are more homogenous than other dimensions from the earlier scales, both empirically

and conceptually. Each item is rated from 0 (not at all) to 4 (extremely), with higher scores reflecting more mental problems.^[31]

To identify individuals with significant levels of psychological distress requiring clinical follow-up, the standard case rule was used in this study. According to the BSI-18 manual, participants who score ≥ 63 on the summary General Severity Index (GSI) or on any two subscales should be identified as having significant psychological distress requiring clinical follow-up.^[32] The current study yielded a Cronbach's alpha of 0.80 for the somatization subscale, 0.81 for the depression subscale and 0.84 for the anxiety subscale, indicating satisfactory levels of internal consistency.

Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 20 (SPSS, Chicago, IL, USA). Data checking was done to detect any coding errors and illogical or missing values. The final analysis included only complete cases without any missing values (i.e., the tolerated amount of missing values of BSI-18 is < 1 item of each subscale and < 3 items in total).^[33] Sociodemographic variables were presented in frequencies and percentages. Composite T-scores were calculated for the somatization, depression and anxiety subscales of BSI-18, and then recoded into 0 (potential cases of psychological distress) and 1 (no psychological distress) using the standard case rule suggested by Derogatis.^[32] Independent samples *t*-tests were used to test the differences in means of students' scores on the BSI-18 and on the 'suicidal thoughts' item. The significance level of all analyses was set at $P < 0.05$ or $P < 0.01$.

All participants were informed of their rights to participate and that their information would be kept anonymous and only used for this study. Ethical approval for this study (reference no.: REC39/3-S001) was obtained from the Scientific Research Ethics Committee at Jazan University.

RESULTS

Of the 500 students to whom the questionnaire was distributed, 98.6% responded and completed the study questionnaire. After adjusting for the missing values and removing distorted questionnaires, the final sample consisted of 450 students (90%). Of these, 50.2% were females ($n = 226$). The age of respondents ranged from 18 to 26 years, with a mean of 21.33 years (standard deviation = 1.83), and the majority ($n = 228$; 50.6%) belonged to the 21–23-year-old age group. The college-wise distribution of respondents was as follows: 157 students (34.9%) were

from Business Administration, 100 from Sciences (22.2%), 88 from Computer Sciences (19.6%), 81 from Applied Medical Sciences (18%) and 24 from Pharmacy (5.3%). As for the residence, 267 students (60.3%) belonged to rural and 176 (39.7%) to urban areas. Finally, with respect to the family income, 238 students (53.1%) perceived their family income status as very good, 191 (42.6%) as good and only 19 (4.2%) as poor [Table 1].

Table 2 shows the frequencies and percentages of potential cases of psychological distress according to the Derogatis^[32] criteria ($n = 139$; 30.9%), with 33.6% females meeting this criterion versus 28.1% males ($\chi^2 = 1.596$; $P = 0.123$). With respect to the college type, psychological distress was found to be highest in students of Sciences ($n = 36$; 36%) followed by students of Business Administration ($n = 49$; 31.2%), Computer Sciences ($n = 27$; 30.7%), Pharmacy ($n = 7$; 29.2%) and Applied Medical Sciences ($n = 20$; 24.7%) ($\chi^2 = 2.724$; $P = 0.605$). Regarding the type of residence, prevalence of psychological distress was higher among students from rural ($n = 87$, 32.6%) than urban areas ($n = 52$; 29.5%) ($\chi^2 = 0.455$; $P = 0.531$). Students who perceived their monthly family income as "poor" ($n = 9$; 47.4%) reported more psychological distress than students who perceived their family income as "very good" ($n = 72$; 30.3%) or "good" ($n = 57$; 29.8%) ($\chi^2 = 2.563$; $P = 0.278$). However, the differences for all sociodemographic characteristics were not statistically significant.

Table 3 shows the mean scores of students on the three BSI-18 subscales and GSI, wherein higher scores reflect worse mental health. Females scored higher than males on all three subscales of BSI-18 and the total GSI score. Independent samples *t*-tests revealed that for the somatization and anxiety subscales, females scored significantly higher than males ($P = 0.002$ and

Table 1: Sociodemographic characteristics of the study sample

Characteristics	Male, <i>n</i> (%)	Female, <i>n</i> (%)	Total, <i>n</i> (%)
College	<i>N</i> = 224	<i>N</i> = 226	<i>N</i> = 450
Applied Medical Sciences	41 (18.3)	40 (17.7)	81 (18.0)
Pharmacy	14 (6.2)	10 (4.4)	24 (5.3)
Business Administration	67 (29.9)	90 (39.8)	157 (34.9)
Computer Sciences	50 (22.3)	38 (16.8)	88 (19.6)
Sciences	52 (23.2)	48 (21.2)	100 (22.2)
Residence*	<i>N</i> = 221	<i>N</i> = 222	<i>N</i> = 443
Rural	142 (64.3)	125 (56.3)	267 (60.3)
Urban	79 (35.7)	97 (43.7)	176 (39.7)
Perceived family economic status*	<i>N</i> = 224	<i>N</i> = 224	<i>N</i> = 448
Very good	106 (47.3)	132 (58.9)	238 (53.1)
Good	108 (48.2)	83 (37.1)	191 (42.6)
Poor	10 (4.5)	9 (4.0)	19 (4.2)

*There were some missing responses

$P = 0.006$, respectively). However, with regard to the depression subscale, the difference was not statistically significant ($P = 0.149$). These results indicate that females, in general, had significantly more psychological distress than males.

The depression subscale in BSI-18 included the following question regarding suicidal thoughts: “During the past 7 days, including today, how much were you distressed by thoughts of ending your life?” Derogatis^[32] suggested that particular attention should be given to respondents who endorse this question at a moderate or higher level. Table 4

Table 2: General demographic profile of psychological distress

Demographic characteristics	Psychological distress, n (%)	χ^2	P
Overall (n = 450)	139 (30.9)		
Gender			
Male (n = 224)	63 (28.1)	1.596	0.123
Female (n = 226)	76 (33.6)		
College			
Applied Medical Sciences (n = 81)	20 (24.7)	2.724	0.605
Pharmacy (n = 24)	7 (29.2)		
Business Administration (n = 157)	49 (31.2)		
Computer Sciences (n = 88)	27 (30.7)		
Sciences (n = 100)	36 (36.0)		
Residence			
Rural (n = 267)	87 (32.6)	0.455	0.531
Urban (n = 176)	52 (29.5)		
Perceived family economic status*			
Very good (n = 238)	72 (30.3)	2.563	0.278
Good (n = 191)	57 (29.8)		
Poor (n = 19)	9 (47.4)		

*There was 1 missing data

shows the participants’ responses to this question with segregation by gender. Of the 450 participants, 13 (2.9%) reported that they were moderately distressed by suicidal thoughts, 7 (1.6%) were highly distressed and 8 (1.8%) were extremely distressed. Therefore, 28 students (6.2%) were found to have moderate to extreme levels of distress due to suicidal thoughts. An independent samples *t*-test detected no statistically significant difference in the reported responses between males and females for this item ($P = 0.147$).

DISCUSSION

Undergraduate learning is a sensitive and challenging period for students and has been reported to result in high rates of psychological distress for them.^[3-10] In Saudi Arabia, psychological distress has mainly been studied only among medical students, where the prevalence of mental distress is anyways high owing to the stressful medical education environment.^[21,23-26] The present study included undergraduate students from five colleges of Jazan University and found that about 31% of students had psychological distress.

This finding is consistent with that of previous studies from the United States (31.2%) and Spain (30.0%).^[34,35] However, this finding was lower than that reported in Singapore (55.5%) and Malaysia (46.2%),^[36,37] and higher than that reported in Australia (26.6%) and Ethiopia (21.6%).^[2,38] These differences in the prevalence of

Table 3: Means and standard deviations of students’ scores on the Brief Symptom Inventory-18 subscales and Global Severity Index by gender

BSI-18 subscales and GSI	Males (n = 224)		Females (n = 226)		t	P
	Mean	SD	Mean	SD		
Somatization	5.89	4.31	7.24	4.80	-3.128	0.002
Feeling weak	1.65	1.04	1.87	1.20	-2.113	0.035
Nausea	0.97	1.02	1.26	1.05	-2.951	0.003
Numbness	0.98	0.98	1.20	1.11	-3.150	0.002
Faintness	0.85	1.00	0.02	1.19	-1.633	0.103
Trouble getting breath	0.71	0.94	0.92	1.16	-2.068	0.039
Pains in chest	0.82	1.03	0.97	1.21	-1.391	0.165
Depression	5.12	4.45	5.76	4.87	-1.445	0.149
Feeling blue	1.08	1.05	1.23	1.19	-1.410	0.159
Feeling no interest in things	1.41	1.24	1.51	1.22	-0.888	0.375
Feeling lonely	0.97	1.14	1.12	1.24	-1.302	0.193
Feeling hopeless about future	0.68	1.09	0.91	1.18	-0.466	0.641
Feeling of worthlessness	0.63	0.96	0.72	1.11	-0.893	0.372
Suicidal thoughts	0.17	0.61	0.27	0.83	-1.453	0.147
Anxiety	6.38	4.78	7.71	5.36	-2.765	0.006
Feeling tense	1.46	1.22	1.67	1.25	-1.865	0.063
Nervousness	1.67	1.22	1.89	1.33	-1.863	0.063
Feeling fearful	1.07	1.01	1.35	1.142	-2.821	0.005
Spells of panic	0.71	0.92	0.93	1.11	-2.279	0.023
Suddenly scared with no reason	0.67	0.92	1.02	1.20	-3.446	0.001
Feeling restless	0.83	1.06	0.84	1.17	-0.141	0.888
GSI	17.40	11.13	20.70	12.54	-2.819	0.005

BSI – Brief Symptom Inventory; GSI – Global Severity Index; SD – Standard deviation

Table 4: Suicidal thoughts among the study population

Gender	None (%)	Mild (%)	Moderate (%)	High (%)	Extreme (%)	t	P
Males	203 (90.6)	11 (4.9)	5 (2.2)	3 (1.8)	2 (0.9)	-1.453	0.147
Females	199 (88.1)	9 (4.0)	8 (3.5)	4 (1.3)	6 (2.7)		
Total	402 (89.3)	20 (4.4)	13 (2.9)	7 (1.6)	8 (1.8)		

mental health problems may be explained by either the use of different measuring instruments and their cutoff scores or by sociocultural variations and differences in understanding social self-confidence, self-evaluation and adaptive behavioral styles.^[39]

Consistent with the findings of other studies, mental health problems in the present study were higher among female students,^[2,9,10,24] older and rural area students^[8] and those who reported poor family economic status.^[7,9,10] However, none of these differences were statistically significant in the current study [Table 2].

In the present study, females reported more somatization, depression and anxiety symptoms than males [Table 3]. The difference was statistically significant for somatization and anxiety symptoms. Similar results have also been reported by many studies in Western^[7,35] and Middle Eastern countries.^[10,24] This could be attributed to the following factors: (a) female students have been shown to report more mental and physical symptoms than males;^[40,41] (b) they are more likely to express dissatisfaction about the volume and complexity of the curriculum^[42] and (c) they have less work opportunities in the Middle East.^[9] In addition, gender differences in the prevalence of mental health problems can be explained by psychosocial and biological factors and the interaction between these factors.^[18] However, future studies should explore the association between mental distress and sociodemographic characteristics in more depth than that explored in the present study. These characteristics may include marital status, body mass index,^[9] year of study,^[6] sleep disturbances and waking time,^[26] emotional and academic failure,^[21] perceived physical problems,^[25] smoking^[43] and khat (*Catha edulis*) chewing.^[38]

In this study, 6.2% of the undergraduate students reported that they were moderately to extremely distressed by suicidal thoughts in the past 1 week before inclusion in the study [Table 4]. This is higher than that reported in a study conducted at King Faisal University, where it was found that 1% of college students reported current suicidal ideation.^[10] However, this finding is much lower than that reported in a study conducted among medical students in the United Arab Emirates (17.5%).^[44] The relatively lower prevalence of suicidal thoughts in the present study can be attributed

to the fact that Saudi Arabia is a traditionally conservative society with strong beliefs that suicide is stigmatized and condemned.^[45] However, as suggested by Derogatis,^[32] particular attention should be paid to those who endorsed moderate or higher levels of suicidal ideation. Furthermore, future studies in Saudi Arabia should investigate in-depth the current trends in suicidal ideation and intent, and their correlation among young adults attending universities.

Recommendations

Based on the findings of this study, the author recommends that appropriate screening and intervention programs are required to prevent psychological problems among undergraduate students. In addition, general practitioners dealing with university students should be aware that many students complaining of physical symptoms may also be suffering from mental health problems, and thus they should assess for both these issues. This may enhance the readiness of young adults to discuss their mental health problems and ask for professional help.

Limitations

The current study has five main limitations. First, it included students from only one university, and thus the sample may not be representative of all undergraduate students in Saudi Arabia. Second, this study used a cross-sectional design, and thus its findings may not be indicative of students' psychological distress throughout the academic year. Accordingly, a longitudinal study using structured clinical interview is needed to assess psychological problems among undergraduate students throughout the academic year. Third, this study investigated psychological distress rather than specific mental health problems. Therefore, psychological distress in the present sample may represent those with mental disorders or those who experience a temporary distress due to situational stresses. Fourth, the Arabic version of BSI-18 scale has not yet been validated in literature. Finally, the 'suicidal thoughts' variable is, by nature, a sensitive topic and social desirability bias is inevitable. However, these limitations do not underestimate the significance of the present study and concerted efforts are needed to recognize and prevent mental health problems in this population.

CONCLUSIONS

This study revealed that about 31% of undergraduate students at Jazan University have psychological distress.

This finding highlights the need for rigorous efforts by the university administrators and health-care professionals to develop proper support services targeting this group of students.

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Conflicts of interest

There are no conflicts of interest.

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