

Factors associated with depression among Turkish faculty of education freshmen by Beck depression Inventory–II–Turkish

Dejavniki depresivnosti pri študentih prvega letnika pedagoške fakultete z vprašalnikom BDI-II-T

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Abstract

Aims: To assess the prevalence of depression among the first-year university students.

Methods: 237 freshmen contributed anonymously to the study on a voluntary basis and an informed consent was obtained. Beck Depression Inventory-II Turkish (BDI-II-T) was applied. SPSS 11.0 statistical program was used.

Results: Overall depression prevalence was 8.4 %. 54.9 % of subjects were females. 3 factors were found: factor 1 (depressive) with 11.2 %, factor 2 (cognitive) with 9.7 % and factor 3 (somatic-affective) with 8.8 % of total variance. Mild depression was found in 5.9 %, moderate in 1.7 % and severe depression in 0.8 % of subjects.

Conclusion: BDI-II-T was found to be useful for the detection of depression among freshmen in terms of academic failure and future health.

Povzetek

Cilj: Ugotoviti prevalenco depresivnosti pri študentih prvega letnika univerzitetnega študija.

Metode: 237 študentov prvega letnika na univerzi v Turčiji je prostovoljno sodelovalo v študiju. Pred anonimnim izpolnjevanjem vprašalnika BDI-II-T, ki je bil obdelan s statističnim programom SPSS 11.0, so podpisali soglasje za sodelovanje v študiju.

Rezultati: Celotna prevalenca depresivnosti je bila 8,4 %, od tega 54,9 % pri ženskem spolu. Ugotovili so 3 dejavnike depresivnosti: depresivni v 11,2 %, kognitivni v 9,7 %, somatsko-afektivni v 8,8 % celotne variance. Blago depresijo so našli pri 5,9 %, srednjo pri 1,7 % in hudo depresijo pri 0,8 %.

Zaključki: Vprašalnik BDI-II-T se je izkazal med študenti prvega letnika za uporabnega pri odkrivanju depresije, povezane z neuspehom pri študiju, in pri ugotavljanju vpliva na zdravje v prihodnosti.

Introduction

Depression is one of the most common mood disorders. Traumatic life events, sexual impulses, failure of classes, separation from the family are common causes of depression.¹ Psychostimulant drug use, sedative-hypnotic withdrawal, seasonal changes can also cause depression. Socially inactive people with low self-esteem, usually feel insufficient in adapting even to minimal changes in their lives. Lifetime minor depressive disorder prevalence was noted by 10 %.¹

Depression is also common during entrance to the university. Especially, freshmen may perceive entrance to university as a stressful event representing a passage to a new life.² Depression could affect the student's academic success and his future such as withdrawal from study. Dropout ratio was found two-times higher in first-year students compared to second or third year students.² In a study among first year medical school students, academic performance was found negatively correlated with stress and depression.³

Moreover, a prominent inverse relationship was found between years of study and mental health among university students. Especially, freshmen are at great risk for depression.⁴

Beck Depression Inventory has been developed primarily by Beck et al. in 1961 and revised in 1996.^{5,6} Hisli did the Turkish validation of BDI-II.⁷

Because of its risks for educational life and health of the students, depression must be queried. Moreover, depression may cause emergent conditions like suicide. According to researches, females were two times more prone to depression compared to males.¹ Low socioeconomic status and low educational level were among the major risk factors.

Faculty of Education of Celal Bayar University is located in a mountainous small town, Demirci, far distant to the main campus situated in the city (approximately 160 km distant). Meanwhile, 3200 students had been there in total, of which 915 were freshmen. State had built some youth hostels with a capacity of 2000 persons in total there. However, psychosocial and health needs were never met and it has been always labeled as a region of deprivation.

Because this subject was important, we aimed to assess the prevalence of depression and its precipitators among freshmen.

Materials & methods

This study is performed at Celal Bayar University, Faculty of Education, Demirci, Manisa, Turkey in May 2006. Out of nine hundred and fifteen freshmen, 237 participated in Beck Depression Inventory-II Turkish (BDI-II-T) on a voluntary basis.^{6,7} The test constituted of 21 questions revealing mood state of the subject. Each question scored 0 to 3. Depression scores less than 10 were accepted as normal; 10–16 were accepted as mild depression, 17–29 as moderate, 30–39 severe depression and greater than 39 very severe depression.⁷ Statistical Package for the Social Sciences (SPSS, Chicago, IL, version 11.0) was used to analyze the data. Numerical data were expressed as arithmetical means \pm 1 standard deviation. Student's t-test and one-way ANOVA test used to analyze the data. A p-value of less than 0.05 was considered statistically significant.

Results

Of the 237 freshmen who contributed, overall depression ratio was 8.4%. Demographic data are presented in Table 1. Mean age was 18.12 ± 1.35 (SD), ranged from 15 to 27 years. Almost 90% of depressive students were less than 20 years old (Table 1). Mild depression was found in 5.9%, moderate in 1.7% and severe depression in 0.8% of subjects.

Internal consistency of BDI-II-T was found $\alpha=0.832$. Mean item-total score correlation coefficients were found 0.473 (ranging from 0.324 to 0.630). Kaiser-Meyer-Olkin sampling adequacy measure was found to be 0.773. Bartlett's sphericity test was found significant. These two tests results have allowed us to do factor analysis of BDI-II-T. According to principal component analysis by the Varimax rotation with Kaiser Normalization, the eigenvalues over 1 were: 4.993, 1.890, 1.494, 1.239, 1.162, 1.074 and 1.029. Therefore, we have determined seven factors. Of the 7 factor weights, 0.40 was considered as the criteria value. According to the criteria value, 3 factors were interpreted (Table 2). We can group Factor 1 (item no.1 sadness, item no.2 pessimism, item no.4 loss of pleasure, item no.5 guilt feeling, item no.7 self-dislike, item no.12 loss of interest) depressive; Factor 2 (item no.1 sadness, item no.3 past failure, item no.8 self-criticalness, item no.9 suicidal thoughts or wishes, item no.13 indecisiveness, item no.16 sleeping patterns change) cognitive; Factor 3 (item no.10 crying spells, item no.11 agitation, item no.12 loss of interest, item no.18 change in appetite, item no.19 weight loss) somatic-affective factors of BDI-II-T.

Feelings of punishment, worthlessness and crying were found to be significantly higher among males compared to females ($p = 0.037$; $p = 0.024$; $p = 0.020$, respectively).

A significant relationship was found between depression scores and the BDI-II questions answered by subjects (all $p=0.00$) (Table 3).

No significant relationship was found between pessimism and past failure, pessimism and feelings of punishment, pessimism and self-criticalness, pessimism and suicidal thoughts or wishes and pessimism and agitation.

Regarding the relationship between self-dislike and age of the subjects, subjects between 20 and 25 years old were found to appreciate themselves. However, subjects younger than 20 years were found to dislike themselves (*Somer's d* = -0.069, *p* = 0.003). A significant relationship was found between crying and loss of energy (*Somer's d* = 0.290, *p* = 0.002). There was significant relationship between pessimism, past failure, feelings of punishment and guilty.

In addition, no significant relationship was found between agitation and pessimism,

past failure and self-dislike. The relationship between indecisiveness and past failure, punishment, self-dislike, self-criticalness and agitation were statistically insignificant. No significant relationship found between loss of interest in sex and sadness, pessimism, past failure, self-dislike, suicidal thoughts or wishes and agitation.

Multinomial logistic regression test indicates a statistically significant relationship between high depression scores, gender, age and all of the inventory questions (*R*² = 1.0, *p* = 0.000).

Table 1: General Characteristics of Depressive Students

Students	n		%	
Gender				
Male	107		45.1	
Female	130		54.9	
Dwelling				
City	36		15.2	
Village	82		34.6	
Small town	119		50.2	
Monthly income				
< 300 \$	83		35.0	
300–600 \$	118		49.8	
> 600 \$	36		15.2	
Family Depression History				
Yes	59		24.9	
No	178		75.1	
Severity				
Mild depression	14		5.9	
Moderate depression	4		1.7	
Severe depression	2		0.8	
Age	Under 20 y.o.		20–25 y.o.	
	n	%	n	%
	220	92.8	17	7.2
Male	80	33.8	9	52.9
Female	140	59.1	8	47.1

y.o.: years old

Following the comparison of depressed students with non-depressed students by one-way ANOVA test; the influence of gender, age, suicidal thoughts and past failure were found to be insignificant ($p > 0.05$). All the other questions in the inventory (sadness, pessimism, loss of pleasure, guilt feeling, punishment feeling, self-dislike, self-criticalness (accusation), crying, agitation, loss of interest, indecisiveness, worthlessness, loss of energy, changes in sleeping patterns, fatigue, changes in appetite, weight loss, somatic concern, loss

Table 2: Varimax rotated iterated principal factor analysis of BDI-II-T for an educational faculty freshmen sample. Values for items weights greater than 0.40 are highlighted in bold.

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Total Variance
Variance %	11.2 %	9.7 %	9.5 %	8.8 %	7.9 %	7.4 %	6.9 %	61.4 %
	Factor 1 (Depressive)	Factor 2 (Cognitive)	Factor 3	Factor 4 (Somatic-affective)	Factor 5	Factor 6	Factor 7	
2. Pessimism	0.705							
7. Self-dislike	0.666							
1. Sadness	0.619	0.416						
4. Loss of pleasure	0.560		0.306					
14. Worthlessness		0.796						
8. Self-criticalness (accusation)		0.522				0.358		
3. Past Failure		0.515	-0.391		0.330			
17. Fatigue			0.739					
9. Suicidal thoughts or wishes		0.484	0.672					
15. Loss of energy			0.489		0.401	0.343		
10. Crying			0.379	0.348			-0.325	
11. Agitation				0.725				
18. Changes in appetite		0.327		0.651				
19. Weight loss				0.537	0.352		0.427	
12. Loss of interest	0.472			0.517				
6. Punishment feeling					0.712			
5. Guilt feeling	0.324				0.706			
21. Loss of interest in sex						0.802		
13. Indecisiveness		0.340				0.510		
20. Somatic concern							0.646	
16. Changes in sleeping patterns		0.322					0.576	

of interest in sex) were found to be significant ($p < 0.05$). There were no significant differences between the depression scores and the income levels of family and dwellings of the freshmen. Cronbach's α coefficient was found to be 0.832.

Discussion

At the beginning of the study, the depression level was proposed to be high among freshmen because of the distant localization of the faculty to a rural area and insufficient social facilities. However, the results of the study showed that the ratio of depression

among freshmen was only 8.4 % and with a high female preponderance. In a similar study performed in Turkey, depression ratio was found 12.5 %, with female dominance.⁸ In another study with a larger participation, depression level was found to be 21 % with male predominance, which was different from both literature and our study.⁴ Female gender and hopelessness were found as predictors of depression in another study.⁹ Life stress, social support and coping skills were found as salient factors of depression among girls. As stated above, depression prevalence was found to be higher among females than men in this and similar studies. Both physical and sexual

Table 3: Depression Scores versus Beck Depression Inventory-II Turkish (BDI-II-T) Questions of the Subjects

	Pearson Correlation Coefficient (<i>r</i>)	<i>p</i>
Sadness	0.506	0.000*
Pessimism	0.324	0.000*
Past Failure	0.327	0.000*
Loss of pleasure	0.546	0.000*
Guilt feeling	0.438	0.000*
Punishment feeling	0.467	0.000*
Self-dislike	0.324	0.000*
Self-criticalness (accusation)	0.563	0.000*
Suicidal thoughts or wishes	0.374	0.000*
Crying	0.528	0.000*
Agitation	0.449	0.000*
Loss of interest	0.517	0.000*
Indecisiveness	0.593	0.000*
Worthlessness	0.468	0.000*
Loss of energy	0.576	0.000*
Changes in sleeping patterns	0.620	0.000*
Fatigue	0.476	0.000*
Changes in appetite	0.630	0.000*
Weight loss	0.343	0.000*
Somatic concern	0.408	0.000*
Loss of interest in sex	0.461	0.000*

* $p=0.000$

abuses are important factors for depression, especially sexual abuse is more important for depression seen in males.¹⁰ However, sexual abuse was not questioned in this study due to cultural properties.

Self-criticism and submissive behavior, insomnia, nightmares were found to be important factors related to depression.^{11,12} Especially, sleeping problems were found to predict future depression quite accurately in adolescent boys and girls.¹³ Depression and low self-esteem are independently associated with suicidal thoughts. In this study, depression was not found to be related to suicide because only few students had answered this question.^{14,15} Defense mechanisms against depression were analyzed previously, where stress reactivity in response to minor stressors was found to be a stronger predictor of depression rather than total stress. Stress reactivity was found to be related with neuroticism, traits of depression, anxiety and vulnerability to stress.¹⁶ Moreover, anger was found to be with a low ratio of depression, while depression mood was found to be related to negative mood profile and decreased goal-confidence.¹⁷ Pessimism and agitation, which were considered as improper reactions against stress, were found to be statistically significant predictors of depression in this study.

Survivor guilt, omnipotent responsibility guilt, submissive behavior, fear of negative evaluation, fear of envy, empathic distress, lower in social comparison are associated with depression.¹⁸ We found also a good correlation between high depression scores and guilt, feelings of punishment, self-dislike and self-criticism in our study. Moreover, autonomic, sociotropic vulnerability and self-criticism are also associated with fearful and preoccupied adult attachment models and depression.¹⁹

In another study analyzing the personal vulnerability factors, developmental experiences and recent family history information were found to be associated with clinical depression.²⁰ In our study, history of a psychiatric event in family was 24.9 % which is quite high compared to Wong's study, where the ratio was found as 8 %.⁴

Neurotic perfectionism also has a relationship with depression and psychosomatic

symptoms.²¹ Self-criticism, self-dislike and indecisiveness have all been found to contribute to depression.

In our study, students less than 20 years disliked themselves much more than those who were between 20–25 years. This is possibly because students get more stable and mature so that their character stabilizes with age. Goal-confidence and self-esteem were found to increase with age, which supports our finding.¹⁷

Depression may affect academic performance among university students. School absenteeism has been found to be frequent in depression.²² Substance abuse, impaired social functioning may be triggered into adulthood with 60–70 % risk of depression.²³ Furthermore, it is important to diagnose depression early. One of the most common reasons why students administer the counseling centers is depression.²⁴ Therefore, experienced health care professionals must pay attention to the early diagnosis of a possible depression among freshmen and find possible precautions to prevent depression among university students.

Conclusion

In conclusion, all school based health center physicians must recognize student depression and be ready for early treatment. Depression is not a negligible situation which could affect the person's both daily life and academic performance.

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