

Assessment of Anxiety Levels among Teacher Candidate University Students by Different Variables: Example of Demirci Öğretmen Adayı Üniversite Öğrencileri Arasında Anksiyete Düzeylerinin Farklı Değişkenler ile Değerlendirilmesi: Demirci Örneği

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Abstract

Objective: To assess anxiety levels and its correlates among students receiving education in the first and second years of Social Sciences of Faculty of Education, Celal Bayar University.

Material and Method: Out of 320 Social Sciences students, 164 completed voluntarily the STAI-state and the STAI-trait anxiety forms on April 2007. SPSS 17.0 used for analysis of the data.

Results: Of students, 67 were female (40.9%), 97 were male (59.1%). Mean age was 22.5±1.55 (min:20 , max:27). Students receiving daytime education had more state anxiety scores than the students receiving nighttime education (t:2.062, p:0.041). Mean STAI-state score was 65.9±5.1 (min:60 , max:80). Mean STAI-trait score was 47.1±5.3 (min:31 , max:62). Internal consistency α -Cronbach value of STAI-state sub-scale found 0.841 and for the STAI-trait anxiety sub-scale, 0.723. Exploratory factor analysis of STAI-state sub-scale found 5 factors among students: relaxedness, nervousness, worries about happenings, remorse and bewilderedness. Exploratory factor analysis of STAI-trait sub-scale found also 5 factors which are: positive-fit, obsessed, indecisive and affected-crying.

Conclusion: Students in the study, had higher scores than literature. Previous study performed in the same faculty denoted a high rate of depression. These two situation could be interrelated.

Keywords: Anxiety, depression, scale

Özet

Amaç: Celal Bayar Üniversitesi Eğitim Fakültesi Sosyal Bilimler Bölümü birinci ve ikinci sınıflarında okuyan öğrencilerin anksiyete düzeylerini belirlemek ve ilişkili faktörleri tespit etmek.

Gereç ve Yöntem: Nisan 2007 yılında, Sosyal Bilimler Bölümü'nün 320 öğrencisinin 164 tanesi gönüllü olarak STAI-state ve STAI-trait anksiyete formlarını doldurarak çalışmaya katıldı. Veriler SPSS 17.0 istatistik programında değerlendirildi.

Bulgular: Öğrencilerin 67'si (%40,9) kadın, 97'si (%59,1) erkekti. Ortalama yaş 22.5±1.55 (min:20 , max:27) bulundu. Gündüz öğreniminde okuyan öğrencilerin anksiyete-state skorları, ikinci öğrenimde okuyan öğrencilerden daha yüksekti (t:2.062, p:0.041). Ortalama STAI-state puanı 65.9±5.1 (min:60 , max:80) bulundu. Ortalama STAI-trait puanı 47.1±5.3 (min:31 , max:62) olarak tespit edildi. Internal consistency α -Cronbach değeri STAI-state için 0.841 ve STAI-trait için 0.723 saptandı. STAI-state faktör analiz dağılımı, 5 faktör üzerinde yoğunlaştı: dinlenememe, sinirlilik, endişe durumu, pişmanlık ve sersemlik. STAI-trait faktör ölçeği faktör analizi de 5 faktörlü yapı gösterdi: pozitif uyum, takıntı, kararsızlık ve etkilenen ağlama.

Sonuç: Çalışmaya katılan öğrenciler, literatüre göre daha yüksek puanlara sahiptiler. Aynı fakültede yapılmış başka bir çalışmada da yüksek düzeyde depresyon tespit edilmişti. İki durumun birbiriyle ilişkili olabileceği düşünüldü.

Anahtar Kelimeler: Anksiyete, depresyon, ölçek

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Introduction

Anxiety disorders are highly seen in the general population (1). Women are twice more affected by the anxiety disorders than men. The National Comorbidity Study in USA reported that one of four persons encountered with at least one anxiety disorder and 12-

month prevalence rate found 17.7%. Women which lifetime prevalence of anxiety was 30.5% had almost doubled the prevalence of men with lifetime prevalence of 19.2%.

Students in the study, have several types of anxiety during their education life. First, the students have right to be taken course in the university by the Students'

Selection and Ranking Examination (Öğrenci Seçme Sınavı-ÖSS). Moreover, Faculty of Education's location was a midtown of the city of Manisa which is very distant to city center and also to other social and entertainment centers. Almost two third of students reside away from home in youth hostels built by the State. Others reside in rented apartments. Faculty of Education has 3000 students and two-education time: daytime and nighttime education. Those are all social, economic and educational status of the location. Therefore, anxiety factors and their properties were analyzed among these student group.

Material and Methods

Out of 320 Social Sciences students (first and second year) of Celal Bayar University, Faculty of Education, 164 students contributed to the study by their own consent on April 2007.

In order to analyze anxiety states of the students, State-Trait Anxiety Inventory (STAI) was used. State-Trait Anxiety Inventory (STAI) was developed by Spielberger, Gorsuch & Lushene (2). Turkish validity and reliability was done by Öner & Le Compte (3). Spielberger developed the STAI as a self-report scale measuring two separable components: state anxiety, which refers to a transitory emotional state characterized by subjective feelings of tension that may vary in intensity over time; and trait anxiety which refers to a relatively stable disposition to respond to stress with anxiety and a tendency to perceive a wider range of situations as threatening (4). In the State Anxiety sub-scale, items are answered by "not at all", "somewhat", "moderately" and "very much" according to the frequency and intensity of feelings. In the Trait Anxiety sub-scale items are answered by "almost never", "sometimes", "often" and "almost always" according to the frequency and the intensity of feelings.

The two sub-scales should be completed subsequently. Each sub-scale has 20 questions. In the sub-scales, there are some positive (meaning to negative feelings) and opposed to negative (meaning to positive feelings) items. State Anxiety Sub-scale has 10 opposed to negative items (Items #1, 2, 5, 8, 10, 11, 15, 16, 19 and 20). Trait Anxiety sub-scale has seven opposed to negative items (Items #21, 26, 27, 30, 33, 36 and 39). Scoring is achieved by a constant plus subtraction of total negative scores from the total of positive item scores. The constant for State Anxiety sub-scale is 50 and for Trait Anxiety sub-scale is 35. The two sub-scales have 20 to 80 maximal score points. The bigger the score, the bigger is anxiety.

Total completion of two sub-scales accomplished in the classroom approximately in 10 minutes for every

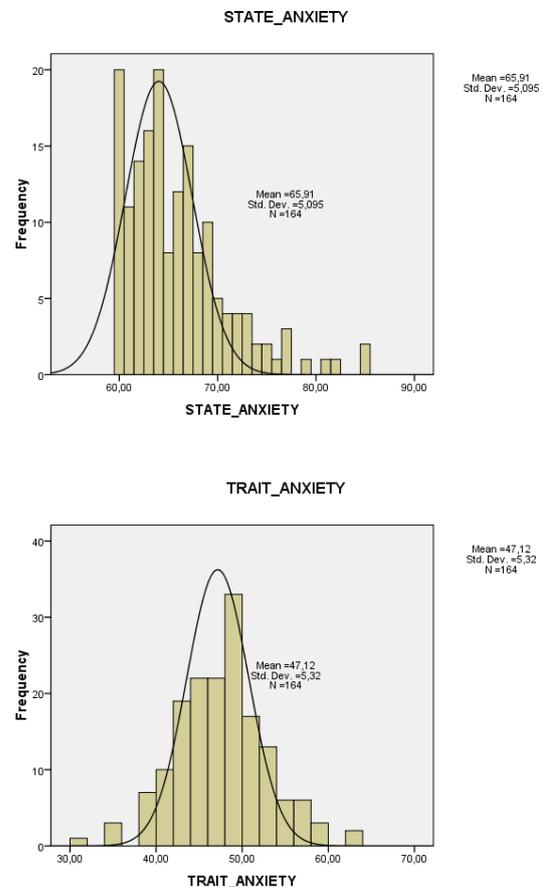
student. Descriptive statistic analysis, Student's t test and factor analysis performed in the study by Statistical Package for the Social Sciences (SPSS) 17.0.

Results

One hundred sixty four Social Sciences students completed concurrently the STAI-state and STAI-trait anxiety forms. 67 were female (40.9%), 97 were male (59.1%). Mean age was 22.5±1.55 (min:20 , max:27). 81 students (49.4%) were first year students, 83 students (50.6%) were second year students. 83 students receive daytime education (50.6%) and 81 nighttime education (49.4%). Mean STAI-state score was 65.9±5.1 (min:60 , max:80). Mean STAI-trait score was 47.1±5.3 (min:31 , max:62).

Multiple linear regressions used to predict state and trait anxiety equations. Therefore, the state and trait anxiety equations are obtained. State anxiety: $71.107 - 1.318 * \text{Education year} - 1,587 * \text{Education time} - 0,294 * \text{Birth date} - 0,062 * \text{Gender} + 0,092 * \text{Birthplace}$ and Trait anxiety equation: $43,366 - 0,503 * \text{Education year} + 0,901 * \text{Education time} + 0.074 * \text{Birthday} + 1,572 * \text{Gender} + 0,243 * \text{Birthplace}$.

Figure 1. Distribution for STAI-state and STAI-trait sub-scales



The sampling did not showed a normal distribution in two sub-scales according to Kolmogorov-Smirnov test (p:0.000 for all items) (Figure 1). No significant difference was found between education years by the state and trait sub-scales (for state anxiety t:1.334 , p:0.184 ; for trait anxiety t:0.648 , p:0.518). Students receiving daytime education held more state anxiety score than students receiving nighttime education (t:2.062 , p:0.041). Trait anxiety scores of daytime students and nighttime students did not differ statistically (t:0.854 , p:0.394). No difference found between boys and girls' state and trait anxiety scores (for state anxiety t:0.120, p:0.904 ; for trait anxiety t:1.799 , p:0.074). Internal consistency α -Cronbach value of STAI-state sub-scale found 0.841 and α -Cronbach value of STAI-trait anxiety sub-scale found 0.723.

Factor analysis was done to determine on which factors was laid anxiety of our students. Factor analysis realized for two sub-scales separately. For STAI-state factor analysis, Kaiser-Meyer-Olkin measure for sampling adequacy found 0.894 and Bartlett sphericity test found significant (p:0.000). After, principal component analysis and varimax rotation for the items of STAI-state sub-scale realized. Factor loadings under 0.30 were not taken into analysis. Five factors explaining 67.4% of total variance were found. Factor no.1 (relaxedness) explained 22.6% of total variance, factor no.2 (nervousness) 16.6%, factor no.3 (worry about happenings) 12.1%, factor no.4 (remorse) 8.7% and factor no.5 (safety-bewilderedness) explained 7.4% of total variance (Table 1).

Table 1. Exploratory factor analysis of STAI-state form among our students

	Rotated Component Matrix ^a				
	1	2	3	4	5
Factors	Relaxedness	Nervousness	Worry about happenings	Remorse	Safety- bewilderedness
Item15	,799				
Item20	,769	,307			
Item19	,731	,302			
Item10	,694				
Item8	,675				
Item16	,672	,311			
Item13		,794			
Item12	,308	,768			
Item3		,759		,340	
Item14	,358	,645	,452		
Item1	,380	,622			,475
Item7			,736		
Item9			,700		
Item17	,383		,689		
Item4				,825	
Item6				,659	
Item2					,692
Item18	-,304				,598

^aExtraction Method: Principal Component Analysis, Rotation Method: Varimax with Kaiser Normalization.

Kaiser-Meyer-Olkin measure for adequacy of sampling found 0.85 and Bartlett sphericity test found significant (p:0.000) for STAI-trait sub-scale. Principal component analysis and varimax rotation were done. Factor loadings under 0.30 were not taken into analysis. Therefore, we obtained five factors explaining 59% of total variance. Factor no.1 (positive-fit) explained 14.6% of the total variance, factor no.2 (obsessed) 13%, factor no.3

(indecisive-unsecured) 11.2%, factor no.4 (safety) 10.7% and factor no.5 (affected-crying) 9.5% of the total variance (Table 2).

Table 2. Exploratory Factor Analysis of STAI-Trait form among our students

Rotated Component Matrix ^a					
Factors	1	2	3	4	5
	positive-fit state	obsessed	indecisive-unsecured	safety	affected-crying
Item1	,840				
Item10	,819				
Item16	,698				
Item20		,742			
Item18		,683			
Item17		,623			,347
Item5			,711		
Item4	,342		,596		
Item12			,590		
Item14		,464	,580		
Item19				,757	
Item13	,322			,658	
Item7				,647	
Item3					,776
Item11			,434		,553
Item9				,308	,473

^aExtraction Method: Principal Component Analysis , Rotation Method: Varimax with Kaiser Normalization

According to anxiety presenting items (opposed to negative, items#1, 2, 5, 8, 10, 11, 15, 16, 19, 20) in STAI-state sub-scale, night time education students were more self-confident than daytime students (d:-0.161 , p:0.022). Nighttime education students were more content than daytime students were (d:-0.235 , p:0.000). Nighttime education students were steadier than daytime students were (d:-0.149 , p:0.032). Nighttime education students feel more pleasant than daytime students do (d:-0.207 , p:0.002). No difference found between anxiety presenting items and gender (p>0.05). No difference found between anxiety presenting items and age (p>0.05).

According to anxiety presenting items (Items #1, 6, 7, 10, 13, 16, 19) in STAI-trait sub-scale, daytime education students feel more secure than night time students (d:-0.188 , p:0.008). Daytime education students feel more content than nighttime students do (d:-0.206 , p:0.003). Students of which birthday was 1989 and under, feel more content than others do (d:0.131 , p:0.041).

Discussion

STAI-S and STAI-T scales used for clinical (5,6,7,8,9) and student trials (10,11,12,13). Clinical anxiety cut-off point for STAI is defined in literature by 40 (14).

According to this, our subjects had obvious clinical state anxiety with a mean of state anxiety 65.9±5.1 and trait anxiety 47.1±5.3.

High scores of our students mediated us to think what caused such a great anxiety. However, we know that the curriculum of the university is very dense in our country. There is some literature denoting that the curriculum changes had an effect on the students' anxiety level (15). As another high scoring cause, department types have also an effect on the STAI scores. For example, in Brazil biomedical students showed a great level of anxiety rather than social sciences students because of the dense curriculum and academic demands in this field (15,16,17). Nevertheless, our students' scores are greater than all of biomedical students' scores denoted in these studies. This could be due to other psychological disorders like depression and learning difficulty (5). In another study performed by us at the same faculty, the depression rate found 39.4% (13). This depression ratio also is greater than normal population depression prevalence. Some other studies in the literature point out the coincidence of depression and anxiety (7,10,13,18,19,20,21).

Another high scoring cause is the location of the Faculty of Education. As described above, the distance of the faculty to Manisa city (160 km) and geographical

difficulties like excess of mountains could cause the difficulty of communication for every individual needs, grocery and social activities included. There is only one cinema saloon in the midtown and no theater saloon in the faculty. Students suffered of lack of social activities and problem of relation with other sex in a location like this.

According to multiple linear regression analysis; for the state anxiety levels, birthplace found as the unique positive independent variable. While no significant difference found on level of anxiety between students, theoretically birthplace has an effect. Not only the birthplace has an effect but also education time, birthday and gender have a positive effect on trait anxiety levels of the students.

Despite we see in the linear regression equation of trait anxiety scale of our study, the gender as a positive independent variable, no gender difference found between female and male students. However, on different studies, gender difference observed in favor of females (2,4,22).

Some studies based on ethnic properties showed that some difference could be occurred among subjects (23,24). While we found five factors for STAI-State and STAI-Trait scale, some other scales had three and four factor models (25,26). This could be due to the sampling example or ethnic difference too.

Students receiving daytime education held more state anxiety score than students receiving nighttime education in our study. Moreover, nighttime students found more self-confident, content and steadier than daytime students. Daytime students had higher scores at the nationwide Students' Selection and Ranking Examination (Öğrenci Seçme Sınavı-ÖSS) than nighttime students did. Therefore, we can deduct that daytime students are more successful students than nighttime students are. Ambition is one of anxiety causes. This result is normal under these circumstances.

Conclusion

In our STAI trial, state and trait anxiety scores of students found higher than all scores found in the literature. We also found that students training in the daytime have much more anxiety than night time students.

Limitations

The number of participants could be higher. Different departments and students of different education years could be included too. We could investigate the causes

of stress (such as familial, social, economic, educational) much more deeply.

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