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**Atılğan Erözkan**

Mugla University

atilgan@mu.edu.tr

Mugla-Turkey

**THE PREDICTIVE ROLE OF ANXIETY SENSITIVITY AND SOCIAL ANXIETY ON DEPRESSION**

**ABSTRACT**

The aim of this study was to examine the predictive role of anxiety sensitivity and social anxiety on depression. The sample consisted of 745 (364 females; 381 males) university students. Anxiety sensitivity, social anxiety, and depression levels of university students were measured by the Anxiety Sensitivity Index-Revised, Social Anxiety Scale, and Beck Depression Inventory respectively. To analyze data, multiple regression analysis was employed. Significant effects of anxiety sensitivity (fear of respiratory symptoms, fear of publicly observable anxiety reactions, fear of cardiovascular symptoms, and fear of cognitive dyscontrol), and social anxiety (social desertion, anxiety for being criticized, sense of worthlessness) on depression was detected.

**Keywords:** Anxiety Sensitivity, Social Anxiety, Depression, University Students

**KAYGI DUYARLIĞI VE SOSYAL KAYGININ DEPRESYON ÜZERİNDEKİ YORDAYICI ROLÜ**

**ÖZET**

Bu çalışmanın amacı, kaygı duyarlılığı ve sosyal kaygının depresyonu ne düzeyde yordadığını incelemektir. Çalışmanın örneklemi 745 (364 kız; 381 erkek) üniversite öğrencisinden oluşmuştur. Üniversite öğrencilerinin kaygı duyarlılığı, sosyal kaygı ve depresyon düzeyleri Kaygı Duyarlılığı İndeksi-Düzeltilmiş, Sosyal Kaygı Ölçeği ve Beck Depresyon Envanteri ile ölçülmüştür. Veri analizi için çoklu hiyerarşik regresyon analizi kullanılmıştır. Kaygı duyarlılığı (solunum ile ilgili belirtilerden korkma, sosyal ortamlarda fark edilebilen kaygı belirtilerinden korkma, kalp-damar hastalıkları ile ilgili belirtilerden korkma ve bilişsel kontrolü kaybetmekten korkma) ve sosyal kaygının (sosyal kaçınma, eleştirilme kaygısı ve bireysel değersizlik) depresyon üzerinde önemli etkileri olduğu belirlenmiştir.

**Anahtar Kelimeler:** Kaygı Duyarlılığı, Sosyal Kaygı, Depresyon, Üniversite Öğrencileri

## 1. INTRODUCTION (GİRİŞ)

*Anxiety sensitivity* is a cognitive risk factor posited by expectancy theory to underlie anxiety disorders and phobias [1]. Expectancy model of fear [2] holds that the three fundamental fears are fear of injury, fear of negative evaluation, and fear of anxiety. Anxiety sensitivity refers to the fear of anxiety symptoms because of the belief that these symptoms will lead to harmful physical, mental or social consequences [3]. Such experiences may include hearing others express fear of such sensations, receiving misinformation about the harmfulness of certain sensations, witnessing a catastrophic physical event such as a heart attack and so forth. Thus, anxiety sensitivity constitutes a disposition to developing anxiety and does not require the experience of anxiety or panic in its own development. Because of this disposition, individuals who are high in anxiety sensitivity worry about becoming anxious, which serves to increase their symptoms [2 and 4]. Anxiety sensitivity may act as a risk factor for the development of depression symptoms. Negative interpretation and fear of autonomic arousal may directly contribute to the development of depression symptoms; anxiety sensitivity may predict depression because of an association with other dysfunctional cognitive biases linked with depression, or anxiety sensitivity may predict depression because anxiety and depression symptoms covary. Therefore, it can be said that anxiety sensitivity as a vulnerability factor in depression [5]. Anxiety sensitivity has been conceptualized as a risk factor for the development of social anxiety. Anxiety sensitivity has been found to be predictive of anxious responses of college students in a social interaction [6]. Anxiety sensitivity is imperative in the development and maintenance of anxiety disorders. Thus, anxiety sensitivity has recently been implicated in the development and maintenance of social anxiety [1].

*Social anxiety* involves the fear of being negatively evaluated by others. These evaluative concerns lead to unwanted anxious feelings, thoughts, and sensations in both real and anticipated social situations. To limit these unwanted experiences, socially anxious people exert a great deal of effort to avoid and control anxiety and the situations that might induce it [7 and 8]. Social anxiety most often begins in adolescence and is most prevalent in individuals between the ages of 14 to 24 who are typically undereducated, single, and of low socioeconomic status. The underlying feature of social anxiety is the marked and persistent fear of performance or social situations. This encompasses the fear of public speaking as well as the fear of social interactions. The common factor between these situations is that they involve doing something in the presence of others with the possibility of being evaluated [9]. The fear of socially anxious people may be so severe that it interferes with work or school and other ordinary activities. While many people with social anxiety recognize that their fear of being around people may be excessive or unreasonable, they are unable to overcome it. Social anxiety is often maintained by an individual's extremely high standards for social performance, a predisposition to assume that other people view them as inadequate, and a tendency to think that what others believe about them is true [10]. All of these factors seem quite relevant to the college student population given that college students face numerous situations in which they could potentially feel as if they are being evaluated, either in classes or less formal social gatherings. Indeed, a large number of college students reported that interpersonal relationships are stressful [11]. Interpersonal rejection sensitivity is positively correlated with social anxiety [12]. High levels of social anxiety in college students also may be a precursor to depression [13].

*Depression* is described as an emotional state revealing itself with the loss of interest and pleasure in ordinary activities, great sadness, feelings of guilt and worthlessness, loss of appetite and sleep, and loss

of sexual desire [14]. Depression affects a person's functioning and well-being to the extent that it can be compared to other debilitating chronic medical conditions like hypertension and diabetes [15]. Depression is a type of mental disorder that affects a person's mood. It can affect thoughts, feelings, behavior, and overall health. Normal feelings fall along a continuum from mild to intense, and the same is true of depression. It's normal to respond to losses in one's life with sadness and gloom. But when these feelings block a person from performing their everyday activities or are out of line with the reality of a person's life, they are considered symptoms of a "depressive disorder" [16]. Because of these symptoms, depression may affect young people's lives negatively. Therefore, investigating the factors related to depression has gained great importance. In a study conducted with university students, it was pointed out that one of the most significant psychological disorders which threaten this group is depression [17].

## **2. RESEARCH SIGNIFICANCE (ÇALIŞMANIN ÖNEMİ)**

There are many problems an university student has to overcome during his or her university period. In particular, most first-year university students are faced with the stressful life events of leaving home and their support systems, perhaps for the first time, and adjusting to a completely new environment where they face both social and intellectual challenges [18]. University students' physical, psychological and social well-being increase if they use their interpersonal relationship skills and solve their interpersonal problems by using rational and appropriate approaches. In this way, they become successful in their education and daily lives. Determining the prediction level of depression by anxiety sensitivity and social anxiety can provide future direction for interpersonal problem solving skills programs and counseling services offered by universities.

## **3. METHOD (YÖNTEM)**

### **3.1. Participants (Katılımcılar)**

The study has been conducted based on the survey model. The participants in the study were 745 (364 females, 381 males; from years 1 to 4) randomly selected undergraduate students studying in different departments of the Faculty of Education at Mugla University. The mean age of the participants was 21.90 years with a standard deviation of 2.00.

### **3.2. Instruments (Veri Toplama Araçları)**

#### **3.2.1. Anxiety Sensitivity Index-Revised (ASI-R)**

The ASI-R [19] is a 36-item measure developed to provide a more comprehensive assessment of the lower-order factors of the original Anxiety Sensitivity Index [20]. The ASI-R has the same instructions and format as the original ASI although 6 of the original ASI items are excluded. Among a sample of 155 psychiatric outpatients, the ASI-R measured 4 lower-order anxiety sensitivity factors: (a) fear of respiratory symptoms, (b) fear of publicly observable anxiety reactions, (c) fear of cardiovascular symptoms, and (d) fear of cognitive dyscontrol. Higher scores on each factor represent greater anxiety sensitivity. The four factors were intercorrelated, with their associations ranging from .28 to .40. They also reported that all four factors were associated positively with scores on the Beck Anxiety Inventory and the Beck Depression Inventory [19]. The Turkish version of the ASI-R was adapted by [21] who reported an internal consistency coefficient of .93, and a test-retest reliability coefficient of .83. The parallel form validity of the ASI-R was tested with the Beck Depression Inventory [22] and State-Trait Anxiety Inventory [23]. In this study, Cronbach's alpha for the scale was calculated .87.

### 3.2.2. Social Anxiety Scale (SAS)

The SAS, developed by [24], was used to determine the social anxiety levels of university students. The 30-item SAS consists of self-relevant statements that respondents answer on a 5-point scale. Scores are averaged across the 30 items and 1=*low social anxiety* to 5=*high social anxiety*. The Cronbach's a coefficient for the SAS was found to be .83. The parallel form validity of the Social Anxiety Scale was tested with the Symptom Checklist-90-Revised [25] using the anxiety and phobic anxiety subdimensions, the Rathus Assertiveness Scale [26], and the Minnesota Multiphasic Personality Inventory-2 [27] using the social introversion subdimension. In this study, Cronbach's alpha for the scale was calculated .82.

### 3.2.3. Beck Depression Inventory (BDI)

The BDI [22] measured the intensity of depressive symptoms in both the depressed and normative samples. The BDI is a 21-question multiple-choice self-report inventory that is one of the most widely used instruments for measuring the severity of depression. The inventory was adapted to the Turkish culture by [28] was used to determine the depression levels of individuals. The 21 items in this inventory each consist of four statements or gradations of intensity of the symptom. Items are rated on a 4-point scale and the items are summed to obtain a total depression score. The BDI has good internal consistency, test-retest reliability, convergent and discriminant validity. The reliability coefficient of the BDI was calculated as .85. The BDI is widely used as an assessment tool by healthcare professionals and researchers in a variety of settings. In this study, Cronbach's alpha for the scale was calculated .83.

## 4. RESULTS (SONUÇLAR)

In this study, the analysis of relationship among anxiety sensitivity, social anxiety, and depression was performed by multiple regression analysis. The data were investigated from the point of erroneous or missing values, outlier values, and multicollinearity in data analysis. The values considered to be entered erroneously were corrected in the erroneous values analysis. In the missing values analysis, randomly remaining very few blank items were assigned values by Expectation-Maximization algorithm. In the outlier analysis, 19 observations, which have Mahalanobis distance value greater than the  $\chi^2_{11, .001}=31.26$  table value, were excluded from the data set. The low level bivariate correlation values show that there is no multicollinearity among the independent variables. It has been seen that Variance Inflation Factor value is less than 5, the tolerance value is greater than .20, the condition index is less than 30, and consequently 745 observations remain in the data set. Results are given below.

### 4.1. The Explanation of Depression By Anxiety Sensitivity (Depresyonun Kaygı Duyarlılığı ile Açıklanması)

The explanation of depression by anxiety sensitivity was performed by multiple regression analysis. A summary of statistics and their significances is given in Table 1.

Table 1. The explanation of depression by anxiety sensitivity  
(Tablo 1. Depresyonun kaygı duyarlılığı ile açıklanması)

Model	R <sup>2</sup>	F	Anxiety sensitivity	t
Independent variables: Anxiety sensitivity (fear of respiratory symptoms, fear of publicly observable anxiety reactions, fear of cardiovascular symptoms, and fear of cognitive dyscontrol)	0.213	30.712***	Fear of res. Symp.	2.894**
			Fear of pub. Obs.	2.699**
			Fear of car. Symp.	2.579**
			Fear of cog. Dys.	3.326***
			Dependent variable: Depression	

\*\*p< .01, \*\*\*p< .001

A multiple regression analysis was performed to determine the effects of anxiety sensitivity on depression. Results given in Table 1 show that subdimensions of anxiety sensitivity have a significant effect on depression and explain 21.3% of depression variance [ $p<.001$ ;  $F=30.712$ ]. The depression levels of students who have fear of cognitive dyscontrol were found to be higher than depression levels of students who have fear of respiratory symptoms, fear of publicly observable anxiety reactions, and fear of cardiovascular symptoms.

#### 4.2. The Explanation of Depression By Social Anxiety (Depresyonun Sosyal Kaygı ile Açıklanması)

The explanation of depression by social anxiety was performed by multiple regression analysis. A summary of statistics and their significances is given in Table 2.

Table 2. The explanation of depression by social anxiety  
(Tablo 2. Depresyonun sosyal kaygı ile açıklanması)

Model	R <sup>2</sup>	F	Social anxiety	t
Independent variables: Social anxiety (social desertion, anxiety for being criticized, sense of worthlessness)	0.261	35.583***	Social Des.	2.844**
			Anx. for Cri.	2.609**
			Sense of Wor.	3.889***
Dependent variable: Depression				

\*\*p< .01 \*\*\*p< .001

A multiple regression analysis was performed to determine the effects of social anxiety on depression. Results given in Table 2 show that subdimensions of social anxiety have a significant effect on depression and explain 26.1% of depression variance [ $p<.001$ ;  $F=35.583$ ]. The depression levels of students who have sense of worthlessness were found to be higher than depression levels of students who have social desertion and anxiety for being criticized.

#### 5. DISCUSSION (TARTIŞMA)

According to the results of this study, fear of respiratory symptoms, fear of publicly observable anxiety reactions, fear of cardiovascular symptoms, and fear of cognitive dyscontrol subdimensions of anxiety sensitivity significantly predict depression. These findings demonstrate

that higher scores for anxiety sensitivity -especially fear of cognitive dyscontrol subdimension of anxiety sensitivity- may represent higher depression. Based on the results of several studies it appears that a specific lower-order facet of anxiety sensitivity, fear of cognitive dyscontrol, is particularly associated with depression symptom severity in clinically depressed patients [29]. It was suggested that a fear of mental incapacitation may represent a depression-specific form of anxiety sensitivity [20]. Empirical support was also obtained in a prospective study [30] using a student sample where fear of cognitive dyscontrol was a significant predictor of changes in depressed mood. Supporting this argument, [19] found that the lower-order factor "fear of cognitive dyscontrol" of the Anxiety Sensitivity Index-Revised is highly correlated with depression. Anxiety sensitivity construct in a large sample of normal adolescents and found a significant correlation between anxiety sensitivity and depression. In reviewing the relationship between anxiety sensitivity and depression, it seems that there is some evidence that proved a link between anxiety sensitivity and depression [31]. An interaction between the Anxiety Sensitivity Index and a measure of negative mood regulation expectancy was a significant predictor of Beck Depression Inventory scores, in addition to the main effects of each variable [32]. Anxiety Sensitivity Index scores in patients with major depression and found elevated Anxiety Sensitivity Index scores in the depressed patients, even in subjects without a comorbid anxiety disorder [33]. Furthermore, longitudinal research showed that Anxiety Sensitivity Index was predictive of greater depressive symptoms in nonclinical subjects [34].

Social desertion, anxiety for being criticized, and sense of worthlessness subdimensions of social anxiety also positively related to depression. These findings demonstrate that higher scores for social anxiety -especially sense of worthlessness subdimension of social anxiety- may represent higher depression. Social anxiety is reported to be the most commonly occurring comorbid anxiety disorder among patients with depression [35]. Furthermore, when comorbidity does occur, social anxiety almost always starts first, often many years prior to the onset of depression [36 and 37]. This consistent finding has spurred interest in the study of social anxiety as a possible risk factor for depression. A possible link between social anxiety and earlier onset of depression has been reported in several studies [38, 39 and 40]. Social anxiety is a relatively recent topic in research on children and adolescents. It is, however, a problem that often has far-reaching repercussions on social relations into adulthood. Depression has similarly been found to be related to problematic peer relations and to social isolation [41]. In a longitudinal study, anxiety disorders in early adolescence predicted clinically significant depressive and anxiety disorders (especially social anxiety) in early adulthood [40]. These observations have sparked interest in the possibility that early identification of and intervention with socially anxious children or adolescents might reduce their risk for depressive disorders in later life [39 and 42]. Social anxiety may thus to a large extent have similar consequences as depression even though the mechanisms may be quite different. Symptoms of depression and social anxiety may also be precursors to more severe psychopathology, including major depressive disorder and social anxiety disorder, which are chronic disorders that often originate in adolescence and continue into adulthood [43]. Social anxiety and depression share characteristics of high negative affect, autonomic arousal, cognitive behavioural, and interpersonal features [44]. Cognitive and affective difficulties have probably been the most extensively researched as they relate to depression. Given the strong presence of cognitions and misinterpretations in the proposed etiological models of social anxiety, it seems relevant to examine the cognitions of individuals with elevated levels of social anxiety. More specifically, [45 and 46]

model of depression proposed that individuals who are depressed perpetuate their depressed mood by having a large number of cognitions in which negative information is overemphasized. Beck's model of depression was examined in individuals who experienced at least low levels of social anxiety in order to determine if the manifestation of cognitive distortions is similar to those of individuals who are depressed [13]. These findings are consistent with the finding that individuals with high levels of social anxiety engage in more depressive cognitive distortions.

In addition, individuals who reported high levels of social avoidance as well as high levels of fear of negative evaluation have been found to report more responses that fall into the depressed-distorted category on the Cognitive Distortions Questionnaire [47]. Social anxiety was linked to a fourfold increase in the risk of depression whereas the other anxiety disorders had little effect. The researchers thought that because Japan is a relatively collectivist culture the social problems linked to social anxiety could make it a more powerful cause of depression in Japan than in other countries. As a result of these studies it can be said that there is a link between social anxiety and depression because a person with social anxiety tend to stay alone and avoid people they have a huge fear of being judged by people and being scrutinized. Social anxiety and depression are related as depression is often a result of social anxiety [48].

#### **6. CONCLUSION AND RECOMMENDATIONS (SONUÇ VE ÖNERİLER)**

It can be concluded from the research findings that anxiety sensitivity and social anxiety important predictors of depression. Limitations of the present study are an indication of possible directions for future research. This study was carried out with university students who are at a transition stage from late adolescence to young adulthood. Hence, this results are not generalizable to other populations. Future researchers should examine the associations among anxiety sensitivity, social anxiety, and depression in other populations. In addition, measures used in the study were self reports. So, participants might be affected by the social desirability factor. In order to reduce the social desirability effect in the future research, peer rating method can be used. Finally, anxiety sensitivity, social anxiety, and depression level of university students can be decreased by designing effective intervention programs that aim to improve their interpersonal communication skills and interpersonal problem solving skills. The relationship of anxiety sensitivity, social anxiety, and depression found in the present study can also be taken into consideration when developing effective counseling programs for different populations.

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