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Effects of Anxiety Sensitivity Index-3 on Suicide Risk Assessment

Anksiyete Duyarlılık İndeksinin İntihar Riskini Değerlendirme Üzerine Etkileri

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Abstract

Objectives: According to the common view, there is no adequate information in psychiatry literature about the connection between on one side "anxiety sensitivity" indicating an intrinsic anxiety tendency or a personality trait and on the other side suicide. This study is planned based on the hypothesis whether higher anxiety sensitivity is a preventive factor in terms of suicide.

Materials and Methods: The study comprises of two groups: one consisting of 31 patients with unipolar depression diagnosis according to DSM-IV-TR, who have never attempted and still had no thought of suicide and the other consisting of 28 patients resorted to Ankara Atatürk Training and Research Hospital psychiatry outpatient department or Ankara Atatürk Training and Research Hospital emergency service upon attempting suicide. Anxiety Sensitivity Index-3 (ASI), Suicide Probability Scale (SPS), Beck Depression Inventory (BDI), and Beck Anxiety Inventory (BAI) are conducted for the patients after receiving their informed consents. In addition, three sub-scales of Anxiety Sensitivity Index-3 -social, cognitive and physical- are investigated with individual scoring.

Results: There were 28 patients in the depression group with suicide history (group 1) and 31 patients in the depression group without suicide history (group 2). No difference associated with age, education, gender and marital status is detected. The difference with respect to total point of anxiety sensitivity index (M_{group1} = 27.2 ± 16.9, M_{group2} = 35.9 ± 15.2, t = 2.045, p = 0.045), scores of "physical" sub-scale (Mdn_{group1} = 5.5, Mdn_{group2} = 10, Z = -1.989, p = 0.047) and total points of Beck Depression Inventory between groups is considered significant. No statistically significant intergroup difference is detected in total points of ASI-3's social and cognitive sub-scales, BAI and SPS.

Conclusion: As ASI-3 is a scale measurable in a short time for evaluating the suicide risk in depression patients, it can be suggested hereby that ASI-3 can be helpful for clinical use.

Key Words: Anxiety sensitivity, anxiety sensitivity index-3, suicide, depression

Öz

Amaç: Genel kabul edilen görüşe göre, psikiyatri literatüründe, içsel bir anksiyete eğilimini gösteren anksiyete duyarlılığı ile kişilik özellikleri ve intihar arasındaki ilişki hakkında yeterli bilgi bulunmamaktadır. Bu çalışma yüksek anksiyete duyarlılığının intihar açısından önleyici bir faktör olup olmadığını araştırmak için planlanmıştır.

Materyal ve Metot: Bu çalışmada hastalar iki gruba ayrıldı. Bir grup DSM-IV-TR'ye göre unipolar depresyon tanısı alan, hiç intihara kalkışmamış ve halen intihar düşüncesi olmayan 31 hastadan oluşuyordu. Diğer grup ise intihar girişimi nedeniyle Ankara Atatürk Eğitim ve Araştırma Hastanesi Psikiyatri Polikliniği'ne veya Ankara Atatürk Eğitim ve Araştırma Hastanesi Acil Servisi'ne başvuran ve DSM-IV-TR'ye göre unipolar depresyon tanısı alan 28 hastadan oluşmaktaydı. Hastalara Anksiyete Duyarlılık İndeksi-3 (ADİ-3), İntihar Olasılığı Ölçeği (İOÖ), Beck Depresyon Ölçeği (BDÖ) ve Beck Anksiyete Ölçeği (BAÖ) uygulandı. Ek olarak ADİ-3'ün 3 alt ölçeği olan sosyal, bilişsel ve fiziksel alt ölçekler de bireysel olarak değerlendirildi.

Bulgular: İntihar öyküsü olan depresyonlu 28 hasta grup 1 ve intihar öyküsü olmayan depresyonlu 31 hasta ise grup 2 olarak değerlendirildi. Yaş, eğitim, cinsiyet ve medeni durum açısından gruplar arasında fark saptanmadı. ADİ-3 total skoru (M_{group1} = 27,2 ± 16,9; M_{group2} = 35,9 ± 15,2; t = 2,045; p =0,045), ADİ-3 fiziksel alt ölçek skoru (Mdn_{group1} = 5,5; Mdn_{group2} = 10, Z = -1,989; p = 0,047) ve BDÖ skoru açısından iki grup arasında anlamlı fark saptandı. ADİ-3 sosyal ve bilişsel alt ölçekleri, BAÖ ve İOÖ skorları açısından gruplar arasında anlamlı fark saptanmadı.

Sonuç: ADİ-3, depresyonlu hastalarda intihar riskini değerlendirmede kısa zamanda ölçülebilir bir skala olarak klinik kullanım için önerilebilir.

Anahtar Kelimeler: Anksiyete duyarlılığı, anksiyete duyarlılık indeksi-3, intihar, depresyon

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Introduction

Anxiety sensitivity, invented by Reiss and McNally (1985), is defined as an excessive fear against anxiety-related sensations and indications believed to have harmful physical and social results.[1] Unlike "anxiety expectancy" term being an expectancy of anxiety in certain conditions, anxiety sensitivity is an inherent basic and continuous fear. This is the characteristic differentiating anxiety sensitivity from anxiety expectancy acquired as a result of panic attacks. Anxiety sensitivity varies depending on how catastrophic a person interprets genetic anxiety and according to personal beliefs about its results.[2] That is why studying the connection between anxiety sensitivity and suicide, being a catastrophic and multi-dimensional event, may be of benefit clinically in determination of suicide risk.

Recently, relations between anxiety sensitivity have been investigated on one side and sub-types of mood and anxiety disorders on the other side. While anxiety sensitivity incidence in patients with panic disorders is high, similar anxiety sensitivity levels are observed in patients with other anxiety disorders (generalized anxiety disorder, obsessive compulsive disorder, social anxiety disorder) and with depression.[3]

In patients with depression, the disease is generally accompanied by anxiety symptoms. Thus, the degree of anxiety sensitivity may phenomenologically provide important information to predict clinical progression. For example, some publications reveal that "loss of cognitive control" -a sub-constituent of Anxiety Sensitivity Index- stands out in patients with depression.[4]

Anxiety sensitivity concept is one of the cognitive models underlying anxiety. It can, in a sense, be defined as "fear of anxiety". To put it in other words, this term is a combination of the concepts of catastrophic misinterpretation and anxiety expectancy.[5]

According to the common view, information available in psychiatry literature about the relation between "anxiety sensitivity" indicating an intrinsic anxiety tendency or a personality trait on one side and suicide on the other side is inadequate. This study was planned to examine whether a high anxiety sensitivity is a preventive factor in terms of suicide.

Materials and Methods

Procedure and Sample

Patients included in the study are diagnosed with unipolar depression by a psychiatrist as a result of face-to-face interviews and using SCID. The study is divided into two groups: one consisting of patients with unipolar depression diagnosis, who have never attempted and still have no thought of suicide; and the other one consisting of unipolar depression patients resorted to Ankara Atatürk Training and Research Hospital psychiatry outpatient department or emergency service with a history of suicide attempt. Later, the patients are given some self-report test forms to fill in. Inclusion criteria for this study are specified as; age between 18 and 65, being literate and accepting to participate in the study. The criteria for exclusion are specified as; age below 18 or above 65, having a physical or mental illness preventing the patient to read, understand and fill in the self-declaration forms to be used in this study,

having an additional psychiatric disorder and not accepting to participate in this study. An informed consent is taken from all participants for this study which is approved by Ethical Committees of Yıldırım Beyazıt University and Ankara Atatürk Training and Research Hospital.

Data Collection Instruments

Anxiety Sensitivity Index-3: "Anxiety Sensitivity Index" defined by Reiss et al for the first time in 1986 was later reviewed, and finally, "Anxiety Sensitivity Index-3" is developed. Anxiety Sensitivity Index-3 involves three sub-scales: physical, cognitive and social.[6] Turkish validity and reliability studies of Anxiety Sensitivity Index-3 were conducted by Mantar et al, and Anxiety Sensitivity Index-3 is shown to be a valid and safe means of measurement for assessing anxiety sensitivity.[7]

Suicide Probability Scale: This scale was developed by Cull and Gill,[8] and its validity and reliability in Turkish society were studied by Tuğcu.[9] It consists of 4 sub-scales as hopelessness, suicide ideation, negative self-evaluation and hostility, and 36 items. It is a Likert type scale scoring from 0 to 5. It is assumed that as the scale scores increase, suicide probability increases, too.

Beck Depression Inventory (BDI): This scale was developed by Beck in 1961 to determine risk of depression and to assess the level and severity of changes in depressive symptoms. A Turkish validity and reliability study of the BDI was conducted in 1988 by Hisli. The scale contains 21 items, and each item is assigned a score of 0–3 based on four self-assessment options.[10,11]

Beck Anxiety Inventory (BAI): This scale, developed by Beck and colleagues, is a self-rating scale used to determine the severity of anxiety symptoms. This scale consists of 21 items, and it is scored on a 0–3 Likert-type scale. A Turkish validity and reliability study of the BAI was conducted in 1998 by Ulusoy et al.[12]

Statistics

Variables for the sample are shown with descriptive statistics. Sample distribution is evaluated with Kolmogorow - Smirnow and Shapiro Wilks. Average and standard deviations are used for normally-distributed deviations, while median and inter-quartile range (IQR) are used for abnormally-distributed deviations. Paired comparisons are conducted with Student-t and Mann Whitney U tests. Relations between categorical variables were investigated with Chi-Square test. After that, binary logistic regression analysis is conducted to show deviations predicting suicide behavior. In all analyses, $p<0.05$ is accepted as a threshold value for statistical significance.

Results

There were 28 patients in the depression group with suicide history (group 1) and 31 patients in the depression group without suicide history (group 2). No difference was detected between the groups in terms of age ($Mdn_{group1}=32$, $Mdn_{group2}=37$ $Z=-1.428$; $p= 0.153$), education ($Mdn_{group1}=8$, $Mdn_{group2}=11$ $Z=-0.644$; $p= 0.520$), gender [$\chi^2(1)=0.042$; $p=0.838$] and marital status [$\chi^2(3)=0.334$; $p=0.953$]. The difference between groups was considered significant with respect to total point of Anxiety Sensitivity Index-3 ($M_{group1}= 27.2\pm16.9$; $M_{group2}= 35.9\pm15.2$; $t = 2.045$; $p =0.045$), scores of "physical" sub-scale ($Mdn_{group1}= 5.5$; $Mdn_{group2}= 10$; $Z = - 1.989$, $p =0.047$) and total point of Beck Depression Inventory. No statistically significant intergroup difference was established in total points of ASI-3's social and cognitive sub-scales, BAI and, SPS. Table 1 shows the demographic characteristics, scale and sub-scale points of groups.

Table 1. Comparison of Demographic and Clinical Characteristics of Patients with Depression in Group 1 (with suicide history) and Group 2 (without suicide history)

		M	S.D.	Percentiles			Z/t	p
				25th	50th	75th		
ASI total	Group 1	27.3	16.9	13.75	24.00	38.50	2.045	0.045
	Group 2	35.9	15.2	21.00	35.00	46.00		
ASI social	Group 1	10.2	6.2	4.25	9.00	14.75	-0.951	0.342
	Group 2	11.7	6.5	7.00	11.00	18.00		
ASI cognitive	Group 1	9.9	7.1	4.25	9.00	16.75	0.211	0.253
	Group 2	11.8	5.7	6.00	12.00	16.00		
ASI physical	Group 1	7.1	5.5	4.00	5.50	9.75	-3.410	0.001
	Group 2	12.2	6.0	8.00	10.00	18.00		
SPS	Group 1	83.2	23.2	65.50	75.50	101.75	-1.101	0.271
	Group 2	73.5	10.2	68.00	72.00	84.00		
BDI	Group 1	26.5	15.2	13.25	29.50	37.00	-2.406	0.019
	Group 2	19.1	7.5	14.00	20.00	24.00		
BAI	Group 1	22.2	15.9	5.00	23.50	32.75	0.437	0.664
	Group 2	23.9	13.0	15.00	23.00	32.00		
Age	Group 1	33.3	12.0	24.00	32.00	38.00	-1.428	0.153
	Group 2	37.7	12.5	27.00	37.00	48.00		
Education	Group 1	9.5	3.0	8.00	9.00	11.00	-0.683	0.494
	Group 2	8.8	3.8	5.00	8.00	11.00		

			Group 1	Group 2	Total	X^2	p
Gender	male	N (%)	7 (25.0)	9 (29.0)	16 (27.1)	0.121	0.728
	female	N (%)	21 (75.0)	22 (71.0)	43 (72.9)		
Marital Status	married	N (%)	16 (57.1)	22 (71.0)	38 (64.4)	1.491	0.474
	single	N (%)	8 (28.6)	5 (16.1)	13 (22.0)		
	divorced	N (%)	4 (14.3)	4 (12.9)	8 (13.6)		

Binary logistic regression method is used to form a model predicting suicide behavior with ASI-3 and BDI variables. Accordingly, the model is statistically significant and its explanatory (R^2) is 0.296. The model's success in predicting patients who have attempted suicide (i.e. sensitivity) was 64.3 %, while its success in predicting patients who have not attempted suicide (i.e. selectivity) was 71%. Table 2 shows the model-related data.

As a result of this study, it is observed that suicide probability of patients with depression reduces by 6 % with each 1-point increase in ASI-3, and increases by 9 % with each 1-point increase in BDI.

Discussion

In psychiatric phenomenology, anxiety concept varies from the most severe psychotic and paranoid conditions to the mildest neurotic disorders at different levels. Differentiation of cause and effect is always an important problem in clinical studies. Therefore, recently-introduced "anxiety sensitivity concept" indicating an intrinsic condition may be an important parameter in clinical researches and maybe present in etiologic studies.

Table 2. Predictive Effects of Total Scores of Anxiety Sensitivity Index and Beck Anxiety Scale for Patients with Depression in Group 1 (with suicide history) and Group 2 (without suicide history)

	B	S.E.	Wald	df	p	Exp(ß)	95% C.I.for EXP(ß)		R^2
							Lower	Upper	
ADI total	-0.062	0.024	6.941	1	0.008	0.940	0.898	0.984	0,296
BDO	0.086	0.030	8.101	1	0.004	1.090	1.027	1.157	

Regarding the results, it is observed that ASI-3 physical sub-scale is higher compared to social and cognitive sub-scales in patients with depression who have never attempted suicide than patients with depression who have attempted suicide. This may show that physical sub-scale is more prominent in the idea of "high anxiety sensitivity is protective for suicide" suggested as a hypothesis. Additionally, unlike the study data, literature states that ASI's physical sub-scale is high for panic disorder, social sub-scale is high for social phobia, and cognitive sub-scale is high for generalized anxiety disorder and depression.[13]

Suicide Probability Scale was first developed in 1990 by Cull and Gill for suicide risk assessment[8] and related Turkish validity and reliability studies were conducted in 2009 by Atlı et al, thereby showing that it is a suitable, reliable and valid measurement to be used in Turkish clinical sampling.[14] In the study, SPS average score is measured 83.2 for the group with suicide attempt, while it is 73.5 for the group without suicide attempt. The approximately ten point difference's not being considered as statistically significant may be a result of using non-parametric tests and it is considered that increasing the case number may be helpful to achieve significant difference.

No significant intergroup difference is detected in terms of Beck anxiety scores. This result can show that potential cumulative effect of co-morbid anxiety findings for suicide risk have not affected the study data.

Like all studies, there are some limitations in this study, too. Suicide is a multi-dimensional condition in which personal characteristics have an influence.[15] Therefore, all findings obtained as a result of investigation by grouping must always be evaluated carefully. Furthermore, some people refrain from taking the scales even if they have been said before the study that personal information will be kept confidential. Moreover, it is a well known fact that people sometimes tend to answer the questions about unfavorable issues such as suicide regarding the social norms.[16]

As a result of this study, it may be suggested that ASI-3 being a scale measurable in a short time for evaluating the suicide risk in depression patients can be helpful for clinical use. Moreover, future studies to be done with this scale taken in a self-reported manner and

answered appropriately in 5-10 minutes can provide useful information for suicide and other important psychiatric conditions.

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