

Full Length Research Paper

An investigation into the effects of anxiety sensitivity in adolescents on childhood depression and anxiety disorder

Ismail Seer*, Arzu Glbahe and Smeyye Ulař

Department of Guidance and Counseling, Faculty of Education, Atatrk University, Turkey.

Received 8 November, 2018; Accepted 1 April, 2019

The purpose of this study is to investigate the effects of anxiety sensitivity in adolescents on childhood depression and anxiety disorder. Mood disorders and anxiety disorders in children and adolescents can be given examples of important research topics in recent years. The participants of the study consist of 670 students in Erzurum city. The data were collected through anxiety sensitivity index and anxiety and depression index for children and adolescents. For data analysis, correlation analysis and structural equation model were used. The results revealed that anxiety sensitivity impacts anxiety disorder and childhood depression through direct and indirect effects in a positive way. The results are discussed in line with the relevant literature.

Key words: Anxiety sensitivity, anxiety, anxiety disorder, depression, structural equation.

INTRODUCTION

Depression as one of the fundamental psychological disorders which disrupts life processes from all age groups is defined as a mental disorder which causes dysfunctional thinking, speaking and physiology, and in which feelings of worthlessness, inadequacy and hopelessness predominate as well as being a state mood with deep sadness (APA, 2013). These disorders which are pervasive among adults have become a field of study in children and adolescents. Childhood depression has become a problem that has been seriously dealt with and discussed in recent years. Although depression is a problem that is handled particularly in adulthood, research shows that it is a common problem in childhood, too (Butcher et al., 2011; Durukan et al., 2010; Seer, 2016; Costello et al., 2006; Krolu, 2015). However,

some researchers claim that childhood depression is masked by symptoms of other psychological problems and is indirectly explained with such symptoms as enuresis, temper tantrum, skipping school, learning disabilities (Kaslow and Thompson, 1998; Kazdin and Marciano, 1998). Childhood depression, though sharing many similarities with adulthood depression, also shows particular differences. Birmaher et al. (1996), maintained that depression in children is reflected through physical problems like hyperactivity, stomach ache, nausea, vomiting, headache, arthralgia. Karaetin et al., (2010), stated that weight loss is one of the most obvious symptoms of depression, it turns into not reaching the average weight in children and moreover, somatic symptoms and social isolation are more frequent in

*Corresponding author. E-mail: ismailsecer84@gmail.com.

children compared to adults. On the other hand, Butcher et al. (2011) found out that dysthymic disorder, instead of major depression, are more frequent in children and adolescents unlike adults. Durukan et al. (2010), expressed that auditory hallucination, physical complaints, introversion and decrease in self-confidence are the most often observed symptoms in childhood (before adolescence), not enjoying life, serious psychomotor regression, delirium and sense of hopelessness are more dominant in adolescence and adulthood. It has also been asserted that symptoms such as suicidal ideation, irritable mood, sleeping problems and distraction in concentration in children also show similarities compared with adults.

The studies on children and adolescents reveal that depression is a rather common and serious problem among children and adolescents. Butcher et al. (2011), determined that depression is common among school-age children at a rate of 1 to 3%. Costello et al. (2006), referred to the prevalence of depression in the pre-adolescence period as 2.8% and in the post-adolescence period as 5.6%. Doménech-Llaberia et al. (2009), determined the prevalence of depression among preschoolers as 1.2%. Bodur and Küçükkendirci (2009), determined the prevalence of depression among adolescents in Turkey to be 9.9%. Lewinsohn et al. (1998) suggested that the impacts of psychosocial dysfunction caused by depression in adolescence period on interpersonal relations, general standard of living and work life may persist in adult life, as well. Kessler et al. (2009) also asserted that there is a high probability of recurrence of depression, seen in adolescence period and in adulthood.

Another psychiatric disorder, which has been frequently studied recently and examined in a multi-dimensional approach on children and adolescents, can be considered as anxiety disorder. Anxiety can be defined as a reaction against stress. Distress, tension and uneasiness arising out of fear and apprehension are usual elements of growth. This fear and anxiety accepted as common place and adaptive in babyhood turn into some neurotic fears in mid-boyhood period, associated with imaginative creatures and other events (Beesdo et al., 2009). Kauffman and Landrum (2013), state that if the severity of anxiety hinders the child from social interaction, sleeping, attending the school, and discovering the environment, anxiety should be assessed and dealt with as impairment. The studies show that 5 to 8% of children and adolescents constantly suffer from anxiety (Curry et al., 2004). Some research findings, on the other hand, show that 15 to 20% of children and adolescents may have suffered from anxiety at some level in their lives (Andersen, 1994; Beesdo et al., 2009). Anxiety disorders in general, share similarities with many disorders such as depression, behavioral disorder and learning disabilities (Kauffman and Landrum, 2015; Silvermann and Rabian, 1995).

Anxiety sensitivity can be considered among the

characteristics that are closely connected with depression and anxiety disorder in children and adolescents. Reiss and McNally (1985), define anxiety sensitivity as a state of extreme fear which is the result of the sense of unease and symptoms with negative effects. Anxiety sensitivity is considered as among the cognitive risk factors in terms of anxiety disorders and depression (Calamari et al., 2008; Seçer, 2014). Although there are not many studies focusing on the effect of anxiety sensitivity on mood and anxiety disorders, the results of these studies show that anxiety sensitivity has a significant effect on panic attack, obsessive compulsive disorder (OCD), agoraphobia and depression (Cox et al., 1991; Grant et al., 2007; Freeston et al., 1996; Seçer, 2014; Sandin et al., 2015; Waszczuk et al., 2015). Mantar et al. (2010), Cox et al. (1991) and Grant et al. (2007), stated that anxiety sensitivity has a negative effect on the occurrence and continuity of many disorders such as panic attack, agoraphobia and especially OCD. Freeston et al. (1996), suggested that anxiety sensitivity, especially its cognitive dimension, can have a negative role in the occurrence and continuity of OCD, the findings of Zimbarg et al. (2009), support this. The related research findings show that there is not a significant difference between individual with OCD and individual without OCD in the physical and social sensitivity dimensions of anxiety sensitivity, in spite of that, there is significant difference between individual with OCD and individual without OCD in its cognitive dimension, and the cognitive sensitivity scores of the individuals diagnosed with OCD are significantly higher. Calamari et al. (2008), determined that there are positive relation between the obsessions of washing, and between the compulsions of checking and aggression.

As previously stated, anxiety sensitivity can be said to be a significant risk source in terms of depression and anxiety disorders. Further, the relationships between the variables have been seen to focus on adults. This causes a significant limitation in terms of determining the role of anxiety sensitivity in the occurrence of depression and anxiety disorders in childhood and adolescence in which the preliminary signs of the psychological disorders reveal. Therefore it is thought that the determination of the relationships between anxiety sensitivity and anxiety disorders can provide significant insights for the processes of prevention and rehabilitation. Through this perspective, the following research questions have been sought to answer:

- (1) Is there a significant relationship between the anxiety sensitivity, anxiety disorders and depressive symptoms?
- (2) Does anxiety sensitivity predict anxiety disorders and depressive symptoms?

METHODOLOGY

In this study, correlational descriptive survey was used (Büyükoztürk et al., 2014). This model enables the researcher to

make predictions related to different variables based on the information obtained from one or more variables. In this direction, is to make predictions considering anxiety disorder and childhood depression based on anxiety sensitivity. For this purpose, latent variable and structural equation model was used in analysis process. Structural equation model is an analysis method which enables the identification of direct and indirect effects by determining the relationship between observable and latent variables and testing their effects on a single model. Comparative fit index (CFI), root mean square residual (RMR), standardized root mean square residual (RMSEA) and standardized root mean square residual (SRMR), which are commonly accepted fit indices in structural equation model, were used (Marcoulides and Schumacher, 2001; Schumacher and Lomax, 2004).

Participants

The participants of the study were 670 secondary and high school students studying in one city center. The participants were chosen based on convenience sampling. The participants were between the ages of 13 and 18 ($M=15.7$, $Ss=1.35$) and 355 were males and 315 were females.

Data collection instruments

Anxiety and depression index for children

Ebesutani et al. (2012), designed an instrument which is used to determine the symptoms of anxiety disorder and depression, was adapted to the Turkish context by Seçer and Şimşek (2015), and psychometric features were analyzed. The instrument included 25 items. In the process of developing the instrument, it was found that the structure had a two-factor form. The first dimension, anxiety disorder, included 15 items and the childhood depression included 10 items. In the process of adapting the instrument, model fit was analyzed through confirmatory factor analysis and it was found that the model fit indices of the two factor model was enough and provided a good fit (RMSEA (0.071), RMR (0.067), SRMR (0.070), CFI (0.98), and Incremental Fit Index (IFI, 0.98)). The findings related to the reliability of the instrument, in terms of two-factor model, 0.91 for the whole instrument and 0.89 and 0.92 for the sub-dimensions.

Anxiety sensitivity index for children

Developed by Silverman et al. (1991), and adapted into Turkish by Seçer and Gülbahçe (2013). The 18-item Likert scale was developed to determine anxiety sensitivity of adolescents by self-report. As a result of Exploratory Factor Analysis (EFA), it was found out that the scale has a three-factor structure and the model fit of the scale is adequate (RMSEA (0.023), RMR (0.032), CFI (0.99), SRMR (0.023), $\chi^2/Sd=1.06$). For criterion related validity, the correlation between the child version of OCI and children's depression inventory and state-trait anxiety inventory was analyzed, and significant correlations were found. It was obtained that the internal consistency of the scale is 0.86 and the reliability of test-retest is 0.84.

As part of this study, the factor structure of Anxiety Sensitivity Index for Children was reviewed and it was found that the three-factor structure explains 57.21% of the variance and the model fit indices related to the two factor structure were found as RMSEA (0.037), RMR (0.035), CFI (0.95), SRMR (0.037), $\chi^2/df= 1.95$. Besides, in terms of reliability values the internal consistency was found as 0.85 and half split reliability was found as 0.83.

Procedure and data analysis

To collect data, scales were implemented to 710 subjects, but, since too many blanks were seen in 17 subjects' responses, they were excluded. The blanks up to 2% in the data set were filled by means of the mean value of the sampling group. Whether the data set meets the parametric criteria was investigated for structural equation modelling and for this purpose, extreme value analysis was conducted. As a result of kurtosis and skewness analysis, since 13 subjects' data had extreme value, they were excluded from the data set. In order to determine the multivariate normality Mahalanobis ve Cook's distance was calculated and the data of 10 subjects who were determined to influence the data set were also excluded. The normality analyses on the 670 subjects were checked and it was found that the data set was parametric.

FINDINGS

The relations between the anxiety sensitivity, anxiety disorder and childhood depression, and the findings according to the structural equation modelling are shown later. To find out whether there was a significant Pearson correlation between the anxiety sensitivity and anxiety disorder and childhood depression, correlation analysis findings are shown in Table 1.

Table 1 shows that there is a significant positive correlation between anxiety disorder and physical sensitivity ($r=0.619$, $p<0.01$), psychological sensitivity and social sensitivity ($r=0.526$, $p<0.01$), childhood depression, physical sensitivity ($r=0.580$, $p<0.01$), psychological sensitivity ($r=0.537$, $p<0.01$) and social sensitivity ($r=0.471$, $p<0.01$). Subsequent to determination of the significant relationship in the correlation analysis, in order to investigate the predicting effect of anxiety sensitivity on anxiety and childhood depression, a measuring model was firstly established and tested. The findings obtained from this modelling were displayed in Figure 1 and the fit indices data were given in Table 2.

Following the determination of these statistically significant correlations, a measuring model to investigate the predictive effect of anxiety sensitivity on anxiety and childhood depression was established and tested. The obtained findings from the measurement model and the data about fit indices are displayed in Table 2.

Given the Figure 1 and Table 2, fit indices of the confirmatory measurement model seem to be satisfactory. Furthermore, it is seen that the anxiety sensitivity has a significant positive correlation with anxiety and childhood depression ($r=0.79$). Two different latent variables were then defined and structural equation was established. While one of these latent variable represents anxiety sensitivity (ANXSEN), the other latent variable represents anxiety and childhood depression (DEPANX). Latent variable is the type of variable used in the structural equation mode (Hu and Bentler, 1999). The findings related to structural equation model established through implicit variables were shown in Figure 2 and the data related to fit indices are displayed in Table 3.

There are some significant criteria to interpret the fit

Table 1. The relationship between the anxiety sensitivity, anxiety disorder and childhood depression.

Parameter	Physical sensitivity	Psychological sensitivity	Social sensitivity
Anxiety disorder	0.619**	0.609**	0.526**
Childhood depression	0.580**	0.537**	0.471**

Table 2. The goodness of fit indices values of the model.

χ^2	Sd	χ^2/Sd	CFI	RMR	RMSEA	SRMR
73.36	35	2,09	0.97	0.044	0.049	0.049

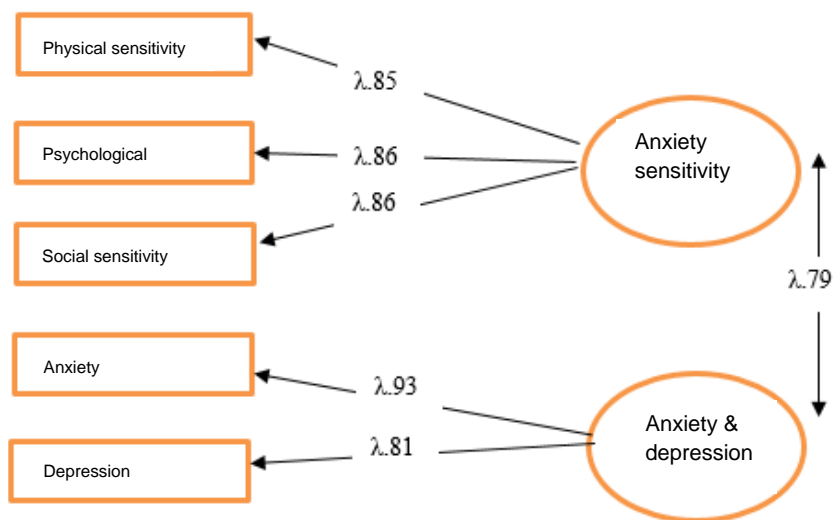


Figure 1. Confirmatory measurement model for the tested model.

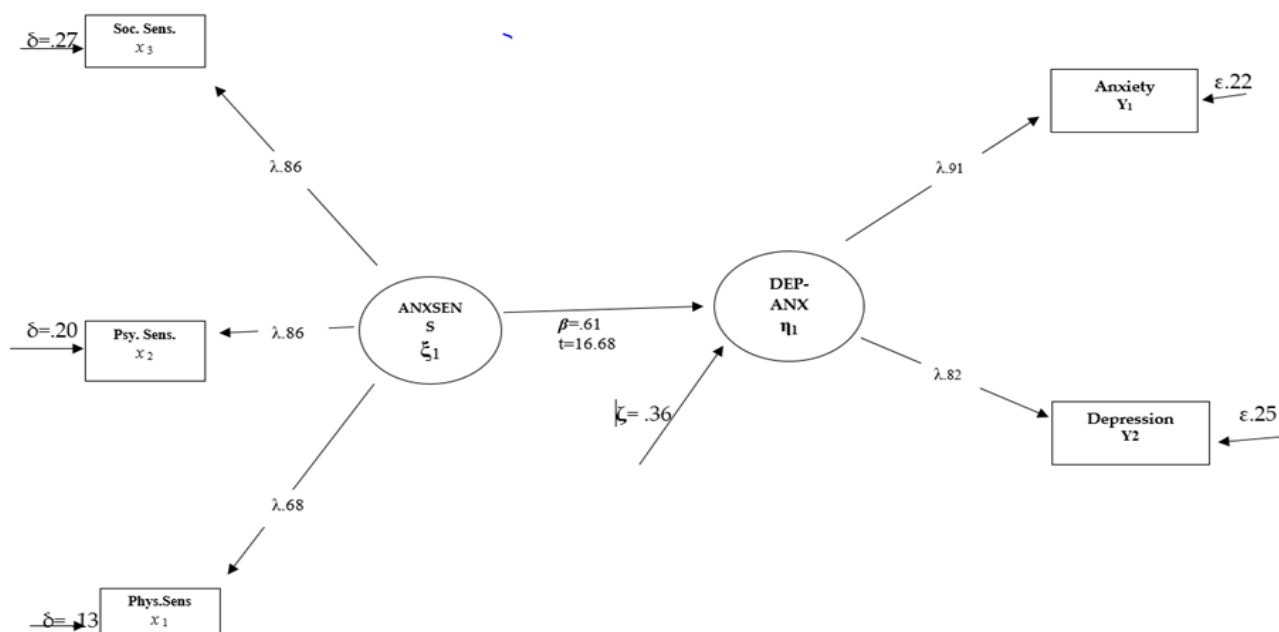


Figure 2. The Standardized Structural Equation Model between anxiety sensitivity and anxiety and childhood depression.

Table 3. The fit indices values of the tested model.

χ	Sd	χ^2/Sd	AGFI	GFI	NFI	NNFI	RFI	CFI	IFI	RMR	REMSEA
6.75	4	1.68	0.97	0.99	0.99	0.99	0.98	0.99	0.99	0.034	0.040

Table 4. Coefficients of determination about the observed variables of the implicit variables.

Fit parameter	Coefficient value
X ₁ , Physical sensitivity	0.73
X ₂ , Psychological sensitivity	0.73
X ₃ , Social sensitivity	0.46
Y ₁ , Anxiety	0.82
Y ₂ , Depression	0.68
ξ_1, η_1	0.61

indices given in Table 3. Hu and Bentler (1999) and Schumacher and Lomax (2004) state that the values should be less than >0.90 for the acceptable fit as for RFI, CFI, NFI, NNFI and IFI, the values should be ≥ 0.90 and over for the perfect fit, as for SRMR, RMR, and REMSEA, the values should be ≤ 0.08 for the acceptable fit, and for the perfect fit, the values should be ≤ 0.50 and below. Given the values in Table 3, it can be said that the fit indices showing anxiety sensitivity having a predicting effect on childhood depression and anxiety have a perfect fit level and it is seen that this established structural model has been confirmed.

The coefficients of determination in a structural modeling

The coefficient of determination in a structural modeling shows the explained variance level in each implicit variable. The explained variance levels of the implicit variables in their own indicator variables for anxiety sensitivity (ANXSEN), childhood depression and anxiety disorder (DEPANX) are shown in Table 4.

Table 4 shows that anxiety sensitivity explains 61% of variance in anxiety and childhood depression. In the measurement model as for the anxiety sensitivity, it is seen that anxiety sensitivity explains 73% of variance in physical sensitivity, 73% of variance in psychological sensitivity, and 46% of variance in social sensitivity. As for the measuring model about anxiety disorder and childhood depression, the depression-anxiety implicit variable (DEPANX) explains 82% of variance in anxiety disorder and 68% of variance in childhood depression.

The findings about total and indirect effects in structural equation model

The total and indirect effects of the anxiety sensitivity,

anxiety disorder and childhood depression implicit variables on the observed variables are shown subsequently. Table 5 shows that the implicit variable established for anxiety sensitivity has direct effects on its own indicator variables, and the second implicit variable established for depression and anxiety disorder has direct effects on its on indicator variables and anxiety sensitivity determined as the predictor variable has indirect effects the indicator variables of depression and anxiety disorder.

DISCUSSION

This study has handled the predictive effect of anxiety sensitivity on childhood depression and anxiety disorder which has recently become an important research question. For this purpose, the predictive effect of anxiety sensitivity on anxiety disorders and childhood depression has been investigated by means of structural equation modelling.

This finding can be considered as that anxiety sensitivity can be a significant risk source in terms of children's and adolescents' anxiety disorder experience. This finding is consistent with relevant research highlighting that in case the anxiety sensitivity increases then the OCD and panic attack increase too (Calamari et al., 2008; Mantar et al., 2010; Freeston and Robinson, 1996; McLaughlin et al., 2007; Seçer, 2014; Schmidt et al., 1997; Wheaton et al., 2012; Sandin et al., 2015).

The adolescents' experience of anxiety can be attributed to anxiety sensitivity. The studies conducted by Reiss and McNally (1985), Mantar et al. (2010) and Seçer (2014), and the other studies showing that individuals who have high anxiety sensitivity become immediately alert even in the case of a probable anxious situation appear to support this argument. Moreover, the findings obtained from Maller and Reiss (1992), a

Table 5. Findings about total and indirect effects.

Parameter	Total effect		Indirect effect	
	Anxiety Sens.	Depression anxiety	Anxiety sens.	
Physical sens.	0.86	-	-	
Psychological sens.	0.86	-	-	
Social sens.	0.68	-	-	
Anxiety disorder	0.17	0.91	0.21	
Childhood depression	0.17	0.82	0.19	

longitudinal research study indicating individuals with higher anxiety sensitivity tend to develop anxiety disorder five times more often than the individuals with lower anxiety sensitivity, and the study finding conducted by Ghasempour et al. (2012) and Grant et al. (2007) stating that the individuals with high anxiety sensitivity feel themselves under more threat and tend to much more avoid the situations which cause anxiety support this consideration.

As a result, anxiety sensitivity can be claimed to be a significant risk source in terms of anxiety disorder in children and adolescents and high level of anxiety sensitivity can increase the possibility of occurrence of anxiety disorders (e.g. panic attack, OCD and phobias). The second finding is that physical, social and psychological anxiety sensitivity positively predicts childhood depression. It can be said that anxiety sensitivity is an important component in children's and adolescents' depression experiences and in case anxiety sensitivity increases then their depressive symptoms increase as well. Though relevant research into the relationship between anxiety sensitivity and childhood depression is inadequate, the findings seem to support this claim (Grant et al. 2007; Taylor et al. 1996). Given that depression appears to be one of the most frequent and severe psychological disorders and its pervasiveness is seen between 5 and 20% in diverse research findings the obtained finding in the current study becomes more important (Helena et al., 2012; Martin et al., 2014; Schmidt et al., 2010).

It is possible that depression seen in childhood and adolescence periods can be a significant risk source for future life. Some researchers claim that depression seen in adolescence period can initiate disability and suicide (Eskin et al., 2008; Liu and Tein, 2005; Waszczuk et al., 2015). Therefore, it can be said that anxiety sensitivity considered to be a significant and predictive throughout the depression experiences of both children and adolescents should be taken place during their treatment and intervention planning.

Conclusion

This study presents significant findings about the correlation between anxiety sensitivity and anxiety

disorder and childhood depression. Given that physical, social and psychological anxiety sensitivity positively and with high level (63%) predict anxiety disorder and childhood depression, then, determining children and adolescents with high anxiety sensitivity and planning and conducting preventive implementations can be suggested. Therefore, these studies which have been carried out to reduce anxiety sensitivity can be said to be an important opportunity to prevent anxiety disorder and childhood depression.

As for the interpretation of the findings about anxiety disorder and childhood depression, certain limitations of the research studies are also significant. Since this study was conducted on the healthy individuals has a disadvantage in terms of generalizability. That is why testing of the hypotheses in samplings with psychiatrically diagnosed individuals in further research will be beneficial. Moreover, the replication of the research on a larger group of sampling at Turkish context can strongly contribute to the generalizability of the results.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

- Andersen JC (1994). Epidemiological issues. TH Ollendick, NJ King, Yule W (Eds.) International handbook of phobic and anxiety disorders in children and adolescents. New York: Plenum Press.
- APA (American Psychiatric Association) (2013). Diagnostic and statistical manual of mental disorders (Vth ed.) Washington, DC.
- Beesdo K, Knaple S, Pine SD (2009). The Position of Anxiety Disorders in Structural Models of Mental Disorders. *Psychiatric Clinics of North America* 32(3):483-524.
- Birmaher B, Ryan ND, Williamson DE, Brent DA, Kaufman J, Dahl RE, Perel J, Nelson B (1996). Childhood and adolescent depression: A review of the past 10 years. Part 1. *Journal of American Academy of Child and Adolescent Psychiatry* 35:1427-1439.
- Butcher JN, Mineka S, Hooley JM (2011). *Abnormal psychology*. Boston: Allyn & Bacon
- Büyükköztürk Ş, Çakmak E, Akgün Ö, Karadeniz Ş, Demirel F (2014). Bilimsel araştırma yöntemleri. Ankara: PegemA Yayınları.
- Bodur S, Küçükkendirci H (2009). Prevalence of depressive symptoms in Turkish adolescents. *Eurasian Journal of General Medical* 6(2):4-12.
- Calamari JE, Rector NA, Woodard JL, Cohen RJ, Chik HM (2008). Anxiety sensitivity and obsessive compulsive disorder. *Assesment* 15(3):351-363.

- Costello EJ, Erkanli A, Angold A (2006). Is there an epidemic of child or adolescent depression? *Journal of Child Psychology and Psychiatry* 47(12):1263-1271.
- Cox BJ, Endler NS, Norton GR, Swinson RP (1991). Anxiety sensitivity and nonclinical panic attacks. *Journal of Behaviour Research and Therapy* 29(4):367-369.
- Curry JF, Mash JS, Hervey AS (2004). Comorbidity of childhood and adolescent anxiety disorders. Prevalence and implication. In: R. J. McMahon & R.D. Peters (Eds), *The effect of parental dysfunction on children*. New York: Kluwer.
- Doménech-Llaberia E, Viñas F, Pla E, Jané MC, Mitjavila M, Corbella T (2009). Prevalence of major depression in preschool children. *European Child and Adolescent Psychiatry* 18(10):597-604.
- Durukan İ, Erdem M, Tufan AE, Türkbay T (2010). Coping strategies and relation of coping strategies with depression and anxiety levels of mothers of children with pervasive developmental disorder. *Turkish Journal of Child and Adolescent Mental Health* 17(2):75-82.
- Eskin M, Ertekin K, Harlak H, Dereboy Ç (2008). Lise öğrencisi ergenlerde depresyonun yaygınlığı ve ilişkili olduğu etmenler. *Türk Psikiyatri Dergisi* 19(4):382-389.
- Ebesutani C, Reise S, Chorpita B, Ale C, Regan J, Young J, Weisz J (2012). The revised child anxiety and Depression Scale-Short Version: Scale Reduction via Exploratory Bifactor Modeling of the Broad Anxiety Factor. *Psychological Assessment* 24(4):833-845.
- Ghasempour A, Akbari E, Azimi Z, Ilbeygi R, Hassanzadeh S (2012). Predicting obsessive-compulsive disorder on the basis of emotion regulation and anxiety sensitivity. *Zahedan Journal of Research in Medical Sciences* 15(2):94-97.
- Grant DM, Beck JG, Davila J (2007). Does anxiety sensitivity predict symptoms of panic, depression, and social anxiety? *Journal of Behaviour Research and Therapy* 45(9):2247-2255.
- Freeston MH, Rhéaume J, Ladouceur R (1996). Correcting faulty appraisals of obsessional thoughts. *Behavior Research and Therapy* 34(5-6):433-446.
- Hu LT, Bentler PM (1999). Cutoff criteria for fit indexes in covariance structural analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling* 6(1):55-65.
- Helena ZM, Rijdsdick S, Frühling V, Thalia CE (2012). A longitudinal, genetically informative, study of associations between anxiety sensitivity, anxiety and depression. *Behavior Genetics* 42(4):592-602.
- Karaçetin G, Doğançün B, Kocabaşoğlu N (2010). Tıbbi Duruma Bağlı Anksiyete Bozukluğu İle İlgili Bir Gözden Geçirme. *Yeni Symposium*, 48(4):292-298
- Kaslow NJ, Thompson M (1998). Applying the criteria for empirically supported treatments to studies of psychosocial interventions for child and adolescent depression. *Journal of Clinical Child and Adolescent Psychiatry* 27(14):55-66.
- Kazdin AE, Marciano PL (1998). Childhood and adolescent depression. In: E. J. Mash & R.A. Barkley (Eds), *Treatment of childhood disorders*. New York: Guilford.
- Kauffman JM, Landrum JT (2013). *Characteristics of Emotional and Behavioral Disorders of Children and Youth*. London: Pearson
- Kessler RC, Avenevoli S, Costello EJ, Green JG, Gruber MJ, Heeringa S, Merikangas KR, Pennell BE, Sampson NA, Zaslavsky AM (2009). National comorbidity survey replication adolescent supplement (NCS-A): II. Overview and design. *Journal of the American Academy Children and Adolescent Psychiatry* 48(4):380-388.
- Koroğlu E (2015). *Klinik psikiyatri*. Ankara: HYN Press.
- Lewinsohn PM, Rohde P, Seeley JR (1998). Major depressive disorder in older adolescents: prevalence, risk factors, and clinical implications. *Clinic Psychology Review* 18:765-794.
- Liu X, Tein JY (2005). Life events, psychopathology, and suicidal behavior in Chinese adolescents. *Journal of Affective Disorders* 86(2):195-203.
- Maller RG, Reiss S (1992). Anxiety sensitivity in 1984 and panic attacks in 1987. *Journal of Anxiety Disorders* 6:241-247.
- Mantar A, Yemez B, Alkın T (2010). Anksiyete duyarlılığı indeksi-3'ün Türkçe formunun geçerlik ve güvenilirlik çalışması. *Türk Psikiyatri Dergisi* 21(3):225-234.
- Marcoulides G, Schumache R (2001). *New developments and techniques in structural Equation modeling*. London: Lawrence Erlbaum Associates, Publishers.
- McLaughlin EN, Stewart SH, Taylor S (2007). Childhood anxiety sensitivity index factors predict unique variance in DSM-IV anxiety disorder symptoms. *Cognitive Behaviour Therapy* 36(4):210-219.
- Martin L, Viljoen M, Kidd M, Seedat S (2014). Are childhood trauma exposures predictive of anxiety sensitivity in school attending youth. *Journal of Affective Disorders* 168:5-12.
- Schmidt NB, Keough ME, Mitchell MA, Reynolds K, Michael J (2010). Anxiety sensitivity: Prospective prediction of anxiety among early adolescents. *Journal of Anxiety Disorders* 24:503-508.
- Reiss S, McNally RJ (1985). Expectancy model of fear. *Theoretical issues in behavior therapy*. S Reiss, RR Bootzin (Eds). San Diego, CA: Academic Press.
- Sandin B, Sanchez C, Chorot P, Valiente RM (2015). Anxiety sensitivity, catastrophic misinterpretations and panic self-efficacy in the prediction of panic disorder severity: towards a tripartite cognitive model of panic disorder. *Behaviour research and therapy* 67(30):30-40.
- Schumacher R, Lomax R (2004). *A beginner's guide to structural equation modelling*. London: Lawrence Erlbaum Associates, Publishers.
- Seçer İ, Gülbahçe A (2013). Çocuk ve ergenlerde anksiyete duyarlılık ölçeğinin Türkçeye uyarlanması: güvenilirlik ve geçerlik çalışması. *Middle Eastern and African Journal of Educational Research (MAJER)*. Özel sayı 91-106.
- Seçer İ, Şimşek MK (2015). Çocuklar için depresyon ve anksiyete ölçeğinin Türkçeye uyarlanması: güvenilirlik ve geçerlik çalışması. *Ejer Congress*, 6-8 Haziran, 2015.
- Seçer İ (2014). Analysis of the Relations between Obsessive Compulsive Symptoms and Anxiety Sensitivity in Adolescents with Structural Equation Modeling. *Education and Science* 39(176):369-382.
- Seçer İ (2016). Üniversite Öğrencilerinde Okul Tükenmişliği ile Psikolojik Uyumsuzluk Arasındaki İlişkinin İncelenmesi. *Atatürk Üniversitesi, Sosyal Bilimler Enstitüsü Dergisi* 19(1):81-100.
- Silverman WK, Fleisig W, Rabian B, Peterson RA (1991). Childhood anxiety sensitivity index. *Journal of Clinical Child Psychology* 20(2):162-168.
- Silverman WK, Rabian B (1995). Test-retest reliability of DSM-III-R childhood anxiety disorders and symptoms using the anxiety disorders interview schedule for children. *Journal of Anxiety Disorders* 9:139-150.
- Taylor S, Koch WJ, Woody S (1996). Anxiety sensitivity and depression: How are they related? *Journal of Abnormal Psychology* 105(3):474-479.
- Waszczuk MA, Zavos HM, Antonova E, Haworth CM, Plomin R, Eley TC (2015). A multivariate twin study of trait mindfulness, depressive symptoms, and anxiety sensitivity. *Depression and Anxiety* 32(4):254-261.
- Wheaton M, Mahaffey B, Timpano K, Berman N, Abramowitz J (2012). The relationship between anxiety sensitivity and obsessive-compulsive symptom dimensions. *Journal of Behavior Therapy and Experimental Psychiatry* 4(3):891-896.
- Zimbarg ER, David B, Brown AT (2009). Hierarchical structure and general factor saturation of the Anxiety Sensitivity Index: Evidence and implications. *Psychological Assessment* 9(3):277-284.