Anxiety scale for parents of gifted children (ASPGC): Validity and reliability study

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Abstract: This study aimed to develop a valid and reliable measurement tool to determine the anxiety levels of parents with gifted children. The participants were selected using a convenient sampling method. The sample of this study consisted of 550 parents of gifted middle school students attending 12 Science and Art Centers throughout Turkey in the 2022-2023 academic year. This study utilized the "Anxiety Scale for Parents of Gifted Children," developed by the researchers in this study, which consisted of 30 items, to obtain quantitative data. A Personal Information Form was used for demographic information. The scale's validity was assessed through face, content, and construct validity, and its reliability was examined using Cronbach's alpha coefficient, item discrimination, and test-retest analyses. Expert opinion and a pilot study were conducted for face and content validity, whereas EFA and CFA were performed for construct validity. The data of 300 randomly selected participants (229 females and 71 males) were used for EFA, while the data of the remaining 250 participants (189 females and 61 males) were used for CFA. As a result of the EFA, eleven items were excluded, and CFA was conducted. The analysis yielded the following fit indices for the scale: RMSEA= .054, GFI= .912, CFI= .937, and IFI= .939. The Cronbach's alpha reliability coefficient was .890. Based on the analyses, a valid and reliable scale comprising 19 items and five factors was developed to assess the anxiety levels of parents with gifted children.

1. INTRODUCTION

Family is a critical environment in which individuals learn by observing their emotional reactions. The provision of a suitable emotional environment plays a crucial role in shaping one's perspective on life, achievement, and talent development. Family environments that provide emotional support are ideal for gifted children as well (Ataman, 2014; Bildiren, 2011). Parenting, in itself, can be a demanding and complex role, and being a parent of a gifted child can be both rewarding and exhausting (Köksal, 2020; Moon, 2004). The notion that parenting gifted children is easier and that families in such situations are luckier is a misconception (Avcı & Demirok, 2022). According to Oğurlu and Yaman's (2013) research, the number of parents

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who perceive having a gifted child as an honorable experience is comparable to those who find it challenging and tiring.

Gifted children have different developmental processes and characteristics than their peers. Consequently, parents may encounter certain difficulties that increase parental stress (Deater-Deckard, 1998). Parents of gifted children experience higher levels of stress than parents of typically developing children (Bishop, 2012).

The parents of gifted children possess distinct attributes, requirements, and concerns. According to Moon and Hall (1998), family members who impose their lifestyle on their exceptionally gifted children in order to enhance their potential may create a stressor. This circumstance may even be described as a "burden" for the parent, as noted by Guthrie (2019). On the other hand, the challenges brought by these distinct needs are often misunderstood or misinterpreted by the surrounding environment, which may lead to parental anxiety (Porter, 2005, p. 208; Sutherland, 2008). Families with gifted children may encounter challenges such as unrealistic expectations of the environment (Aydın & Buğa, 2020), power struggles, sibling conflicts (Ben-Artzey, 2020), the risk of underachievement (Moon & Hall, 1998), parental feelings of inadequacy (Öztabak, 2018), being labeled as "gifted," the responsibility of balancing developmental areas, choosing a school that will develop your extraordinary gifted (Johnsen, 2017) and inadequate environmental support (Bishop, 2012).

Parents of gifted children are also concerned about finding an educational institution that provides appropriate educational conditions and programming (Bildiren, 2011; Moon & Hall, 1998; Sutherland, 2008). While parents have concerns about their gifted children's future, the thought of not being able to fully support their development also causes anxiety (Çamdeviren, 2014). Factors such as feeling inadequate to meet their child's needs, difficulties in studying, school selection, problems with teachers, relatives, societal expectations, boredom at school, and the process of starting primary school contribute to parental stress (Bildiren, 2011). Often, there is a sense of guilt about being the guardian of their child's talent and, at the same time, a fear of inadvertently suppressing it (McMann & Oliver, 1988). There are concerns about enabling children to demonstrate their potential (Clark 2013).

In addition to these concerns, another area of anxiety related to the social-emotional development of gifted children has emerged, involving issues such as making friends, socializing, and communication (Shichtman, 1999; Sutherland, 2008). Due to the asynchronous development of gifted individuals, they often struggle to communicate with their peers, and the problems they experience in their friendships also impact their relationships with their parents (Köksal, 2020). Parents experience the difficulty of not being able to help their gifted children cope with their challenging emotions (Renati et al., 2017).

Keirouz (1990) identified six domains that encompass the concerns of parents with gifted children. These domains are as follows: concerns related to parental roles, concerns related to sibling relationships, concerns related to the achievement of gifted children's talents, concerns related to parent-school issues, and concerns related to the social-emotional and cognitive development of gifted children.

The activation of gifted children's capacities, their ability to enjoy life, and becoming happy and healthy individuals is associated with the attitudes of parents. Therefore, similar to all other children, parents' contribution is important in raising gifted children (Karakuş, 2010). All these challenges require parents of gifted children to possess various skills and strategies, and the resulting concerns and stress are reflected as anxiety for parents (Eroğlu-Garip et al., 2022).

Several scales have been developed to assess parental anxiety. These include the State-Trait Anxiety Inventory (Spielberger et al., 1970), Parental Stress Scale (Berry & Jones, 1995), Generalized Anxiety Disorder Scale (GAD-7) (Spitzer et al., 2006), and Perceived Stress Scale (Cohen et al., 1994). The State-Trait Anxiety Inventory, developed by Spielberger et al. (1970),

was adapted to the Turkish culture by Öner and LeCompte (1998). The inventory considers anxiety in terms of two factors: state anxiety and trait anxiety. Anxiety was measured using 40 items. This scale has been used in many studies conducted in Turkey on adult and parental anxiety (Alisinano lu & Uluta 2003).

There are two measurement tools developed to measure parents' stress in Turkey. The first of these is the Mother and Father Stress scale developed by Özmen and Özmen (2012). The scale aims to measure the difficulties experienced by parents in their relationships with their children in daily life. It consists of 16 items and a single dimension. The second study is the Parenting Stress scale by Aydo an and Özbay (2017). The scale addresses the stress associated with being a parent in a single dimension. Considering the existing scales, it seems that there are a limited number of measurement tools to determine parenting stress. Additionally, existing scales do not include the concerns of parents of gifted children, who develop differently from their peers.

Considering the scales used in national and international studies on the anxiety levels of parents of gifted children, it is seen that scales developed for parents of typically developing children or those with special needs are used (e.g., Bishop, 2012; Eren et al. 2018; Francis, 2014). It seems that a scale measuring the parental concerns mentioned in the literature is needed. It is thought that the current study will fill this gap in the field.

According to five-factor personality theory, emotional balance and harmony constitute an important part of personality traits (Costa & McCrae, 2012). Parents' emotional balance and calmness contribute to a more positive development of children. However, parents' anxious attitudes may reduce life satisfaction (Dost et al., 2019). Parents' emotional inconsistencies may negatively affect young people's social competence (Bilgin, 2017). It is known that parental anxiety has a significant impact on anxiety and perfectionism of gifted children (Yazıcı, 2019). Therefore, developing a measurement tool to determine the concerns of parents of gifted children is important not only for the child's development but also for providing accurate guidance and consultancy support to parents and students. Creating a support group where parents of gifted children can face similar difficulties (Köksal, 2020), it is necessary to measure parents' concerns in order to develop support programs for these difficulties (Yıldız & Altay, 2021). By identifying parents' concerns, this measurement tool can help educators and mental health professionals to support these families more effectively. Furthermore, knowing the difficulties experienced by the family helps bridge the understanding gap between the school and family (Keirouz, 1990).

The objective of this study was to create a reliable and valid measurement tool for assessing the anxiety levels of parents of gifted children, utilizing the existing body of literature as a reference. To achieve this aim, efforts have been made to address the following research questions:

∫ Is the scale developed to assess the parents' anxieties with gifted children valid?
∫ Is the scale developed to assess the parents' anxieties with gifted children reliable?
∫ What are the dimensions of a reliable and valid anxiety scale for parents with gifted children based on a solid theoretical foundation and empirical evidence?

2. METHOD

2.1. Sample

The study population consisted of parents of gifted children residing in various cities. The study group, representing these parents, was formed using a convenience sampling method by reaching out to the parents of Science and Art Centers (SACs) in various cities who volunteered to participate in this research. This sampling method was preferred because it facilitated data collection (Frankel & Wallen, 2008). Yoo and Moon (2006) emphasize that gifted individuals have different counseling needs depending on their age level. Since it is thought that the

concerns of parents of gifted children vary according to their children's developmental period, 550 parents of gifted children at the secondary school level voluntarily participated in the study. While the majority of the participants (76%) were mothers, the remaining 24% were fathers. Parents from Istanbul, Konya, Bursa, A rı, Kütahya, anlıurfa, Artvin, Malatya, Gaziantep, Adana, Denizli, and Manisa contributed to this study. Demographic characteristics of the participating parents and their demographic information are presented in Table 1.

Table 1. *Descriptive analysis of the demographic information of the participants.*

Variable	Options	f	%
Age	Between the ages of 31 and 40	253	46
	Between the ages of 41 and 50	278	50.5
	51 years and older	19	3.5
Grade level of the child	5th Grade	205	37.3
	6th Grade	162	29.5
	7th Grade	141	25.6
	8th Grade	42	7.6

As seen in Table 1, when the ages of the parents participating in the study were examined, more than half (50.5%) were between the ages of 41-50. Of the children, 37.3 were in the 5th grade, 29.5 percent in the 6th grade, 25.6 percent in the 7th grade and 7.6 percent in the 8th grade. When the educational level of the participating parents was examined, almost half (47.82%) had a licence degree and 22% had completed high school.

The data of 300 randomly selected participants (229 females and 71 males) were utilized for Exploratory Factor Analysis (EFA). The remaining 250 participants' data (189 females and 61 males) were used for Confirmatory Factor Analysis (CFA). Ho (2006) stated that the sample size for factor analysis should exceed five times the number of items. According to these standards, it can be seen that the sample of 550 individuals, which was used for this 30-item questionnaire in the current study, is sufficient.

2.2. The Development Process of the Data Collection Tool

The process of developing the anxiety scale for parents of gifted children consists of the following stages: identifying the problem situation, conducting a literature review related to the problem, item generation, obtaining expert opinions, conducting a pilot study, performing validity and reliability analysis, and presenting the final version of the scale.

For the literature review, previous scale studies on parental anxiety (Akkök, 1989; Berry & Jones, 1995; Kaner, 2001; Özmen & Özmen, 2012; Spielberger, 1970) and research on the anxieties of parents with gifted children were examined (Bildiren, 2011; Bishop, 2012; Clark, 2013; Çamdeviren, 2014; Porter, 2005; Sutherland, 2008;). In line with the studies examined in the literature, it has been observed that the concerns of parents with "normal" children and parents with specially talented children differ. This difference indicates the need for a scale (Bishop, 2012). The literature review revealed that parents might experience anxieties related to their gifted child's academic development, emotional development, social development, challenges in interaction, high expectations, and inadequacy of educational opportunities.

A 43-item questionnaire was developed to evaluate the parents' concerns with gifted children. The first section of the form included questions about parents' demographic information, while the second section consisted of items related to concerns grouped into five dimensions based on existing literature: concerns about academic development, concerns about emotional development, concerns about social development and interaction challenges, concerns arising from high expectations, and concerns related to educational opportunities and resources.

Special attention was attached to ensuring the clarity of the scale items and avoiding multiple judgments in their construction.

A total of 43 items were created and the opinions of five experts were sought, two from the field of Measurement and Evaluation for the scope and face validity of the items and three from the fields of Special Education and Psychological Counseling and Guidance. The draft form of the scale was sent to the experts as the "Expert Evaluation Form." In the evaluation form, experts expressed their opinions regarding each dimension and item as appropriate/not appropriate and provided item suggestions and correction recommendations in the case of not being appropriate. The content validity ratio (CVR) of the scale was calculated using Lawshe's (1975) technique. The content validity ratios (CVR) of each scale item presented to the expert opinion were calculated. The content validity index (CVI) of the scale was 0.92. This value meets the requirement proposed by Lynn (1968) to be greater than 0.83 and is considered sufficient. Based on the opinions of the experts and the content validity ratios, 12 items with similar content and limited ability to measure the specified characteristic were removed from the scale. Items that were not suitable for dimensions were placed under the relevant dimensions. Items with semantic errors and those measuring multiple skills were corrected, resulting in a trial form of the scale consisting of 31 items.

The pilot implementation phase was conducted with ten different parents using the trial form of the scale through interviews to assess the comprehensibility of the items. Based on the feedback received during the pilot implementation phase and the consensus among the researchers, one item was removed, resulting in the final version of the scale consisting of 30 items. During the pilot application phase, the participants read the scale items using the think-aloud technique. However, a single item is not sufficiently understood. The items were removed from the scale based on the consensus of researchers. The scale form was the final form of 30 items.

In the final stage, the scale was administered to parents of gifted children who received education at the middle school levels. The scale presented to parents is a 5-point Likert scale, with the addition of the option "I have no opinion." The parents' degree of agreement with the items in the scale is classified as follows: "I have no opinion" (0), "Strongly Disagree" (1), "Disagree" (2), "Neutral" (3), "Agree" (4), and "Strongly Agree" (5). Since there were no reverse-scored items in the scale, the obtained scores were summed to determine the level of parental anxiety. Since there are no reverse items on the scale, the parental anxiety level was determined by adding the scores obtained. The score range to be taken from the scale is between 0-95. High scores indicate high parental anxiety (Aydoğan & Özbay, 2017; Çekiç et al., 2015).

2.3. Data Analysis

During the data analysis process, the SPSS 26.00 package program was used for EFA and the AMOS 24.00 package program for CFA. To test the construct validity and reliability of the scale, a sufficient number of data points is required (Akbulut, 2010). Comrey and Lee (1992) have stated that a sample size of 300 is good, while a sample size of 500 is very good. Ho (2006) emphasizes that the sample size should be at least five times the number of items in the scale. The scale was filled out by 550 participants in this study. In light of this information, it can be said that the sample size is appropriate for the validity and reliability study of the scale.

To assess the construct validity of the Anxiety Scale for Parents of Gifted Children (ASPGC), both EFA and CFA were conducted. The adequacy of the data for EFA was assessed using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity. EFA examines the relationships between different items by grouping them into factors (Salkind, 2015).

To test the obtained structure using EFA, CFA was conducted. In CFA, model fit indices, such as χ^2/df, RMSEA, AGFI, CFI, GFI, NFI, IFI, and TLI, were considered to examine the model. The reliability analysis of the scale was assessed using Cronbach's alpha coefficient, item

discrimination index, and test-retest reliability. The discriminant reliability analysis of the scale was conducted using an independent samples t-test.

3. FINDINGS

In this section, the statistical procedures conducted within the scope of this study are presented, along with the findings obtained accordingly, following the order of the research questions. In this context, EFA, CFA, item-total correlations, comparisons of sub-upper groups, and test-retest analyses were performed. The first research question of this study was formulated as "Is the scale developed to assess the anxieties of parents with gifted children valid?" To determine whether this scale, which describes parental anxiety, meets the criteria of validity and reliability, separate sections entitled "Findings regarding the Validity of the Scale" and "Findings regarding the Reliability of the Scale" were presented.

3.1. Findings Regarding the Validity

In light of the first research question, both exploratory and confirmatory factor analyses were conducted to test the construct validity of the scale. First, the findings related to EFA are presented. Subsequently, the findings regarding CFA were reported.

3.1.1. *Findings of exploratory factor analysis*

To conduct the EFA, the suitability of the data was tested. Frankel & Wallen (2008) stated that the data could be appropriate for factor analysis if the Kaiser-Meyer-Olkin (KMO) value is greater than .60 and if Bartlett's test of sphericity yields a significant result ($p=0.00<.05$). According to the analysis conducted, the KMO value was.918, and Bartlett's test of sphericity yielded a significant result 4335.166 ($p=.000$). Hutcheson and Sofroniou (2006) state that KMO values between .8 and .9 indicate great suitability and values above 0.90 indicate the best fit. These results indicated that the data were suitable for the analysis.

Exploratory factor analysis is used to preserve the total variance contained in the measured variables and turn it into a component containing fewer variables (Park et al., 2002). It is recommended that these values should be higher than .40 (Field, 2009). The common variance values of the items in the scale vary between .41 and .67. Accordingly, the common variance values of the items were deemed to be appropriate for the scale.

Figure 1. *Line graph of eigenvalues of scale items.*
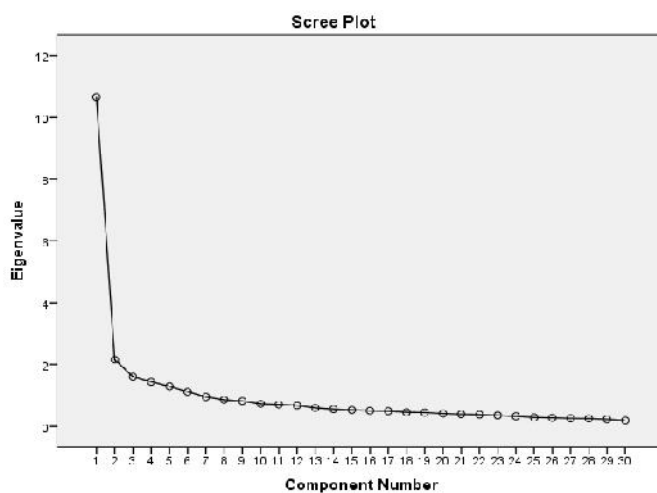
As shown in Figure 1, there are five breakpoints, indicating that the number of factors is limited to five. The eigenvalues and variance percentages of the five-factor scale are presented in Table 2.

Table 2. *Eigenvalues and variance percentages of items in the scale.*

Factor	Eigenvalue	% of variance	% of total variance
Factor 1	6.801	35.797	35.797
Factor 2	1.573	8.277	44.074
Factor 3	1.432	7.539	51.613
Factor 4	1.216	6.401	58.014
Factor 5	1.005	5.292	63.306

The 1st factor contributed 35.79% (eigenvalue= 6.801) of the total variance, the 2nd factor contributed 8.27% (eigenvalue=1.573), the 3rd factor contributed 7.53% (eigenvalue=1.432), the 4th factor contributed 6.401% (eigenvalue=1.226), and the 5th factor contributed 5.29% (eigenvalue=1.005) of the total variance. The value of the 1st factor was approximately five times greater than that of the 2nd factor, and this significant decrease was observed, as shown in Figure 1.

As shown in Figure 1, it can be observed that the line graph continues horizontally after the 5th factor, and there were no significant decreases between the factors. The contribution of these factors to the total variance decreased. The scale was constructed with a five-factor structure, accounting for 63.30% of the scale. Akbulut (2010) states that explained variance should be higher than unexplained variance. Therefore, it can be said that the variance explained by the scale is appropriate.

In exploratory factor analysis, the oblique rotation (direct oblimin) method was used to better explain the structure of the factor. This method is preferred when factors are interrelated (Tabachnick & Fidell, 2007).

Table 3. *The items under the factors and the variance they explain as a result of oblimin rotation.*

Factors	Items	Factors 1	2	3	4	5
Anxiety related to emotional development	I 22	.756				
	I 15	.724				
	I 12	.671				
	I 19	.554				
Anxiety related to difficulties in social development and interaction	I 18		.760			
	I 17		.747			
	I 24		.698			
	I 21		.566			
Anxiety related to educational opportunities and possibilities	I 26			-.862		
	I 25			-.844		
	I 30			-.677		
	I 9			**-.494**	.331	
Anxiety related to academic development	I 1				.814	
	I 2				.657	
	I 3				.645	
	I 5				.629	
Anxiety related to high expectations	I 11					-.841
	I 10					-.714
	I 13	.320				**-.638**
Eigenvalues		6.801	1.573	1.432	1.216	1.005
Explained variance		%35.797	%8.277	%7.539	%6.401	%5.292
Total variance		63.306				

Table 3 presents the loadings of items falling under these factors as a result of oblique rotation. The pattern matrix reflected the strength of each item within a given factor. According to Field (2009), the loadings of items in the pattern matrix should be higher than .40. In light of these findings, the factor loadings in the pattern matrix appear to be appropriate. The total explained variance should be 50% or higher (Thompson, 2004). According to the findings in Table 3, it can be said that the factor loadings in the pattern matrix and the explained variance are appropriate. The developed parental anxiety scale was grouped under five factors with eigenvalues greater than 1, and explained 63.30% of the total variance.

The first factor consisted of four items (12, 15, 19, and 22), and the loading values within the factor ranged from .554 to .756. This factor was labeled as "anxiety related to emotional development." The second factor, composed of four items (17, 18, 21, and 24), exhibits loading values ranging from .566 to .760, indicating "anxiety related to difficulties in social development and interaction." The third factor comprised four items (9, 25, 26, and 30), with loading values ranging from .494 to .862. These items pertain to "anxiety related to opportunities and possibilities in education." The fourth factor, consisting of four items (1, 2, 3, and 5), displayed loading values ranging from .629 to .814. It was labeled as "anxiety related to academic development." The fifth factor, composed of 3 items (10, 11, and 13), has loading values ranging from .638 to .841, representing "anxiety related to high expectations." (Table 4).

Table 4. *Sample items of the scale.*

Parental concerns scale expressions for having a gifted child	Rotated factor loadings
Anxiety related to emotional development	
19 It concerns me when my child experiences intense emotions.	.554
Anxiety related to difficulties in social development and interaction	
21 It concerns me if my child does not prefer to cooperate with their peers when necessary.	.566
Anxiety related to educational opportunities and possibilities	
30 I worry that my child's potential was not notice during the education process.	-.677
Anxiety related to academic development	
1 It concerns me if my child does not make the necessary effort thinking that she/he will be successful without studying.	.814
Anxiety related to high expectations	
13 It concerns me that teachers set high expectations for my child.	-.638

In summary, EFA was performed with an oblique rotation method on 30 items. Items with eigenvalues greater than one were grouped under five factors, which accounted for 63.30% of the scale's variance. When determining which items should be removed from the scale, a minimum factor loading of .30 was considered. Items were not allowed to have significant loadings on multiple factors (if an item loaded on two factors, the difference between the loadings should be at least .100). Furthermore, attention was paid to factors consisting of three or more items. Consequently, items 6th, 29th, 7th, 8th and 23rd items were removed due to overlap; the 16th, 14th and 27th items had factor loadings below .40, and items 4th, 20th and 28th items were removed as their content did not match the respective factor. After conducting another EFA with 19 items, a five-factor structure was obtained, explaining 63.30% of the scale's variance. The factors were named based on information from the literature (Bildiren, 2011; Bishop, 2012; Clark, 2013; Eren et. al, 2018; Eroḡlu-Garip et al., 2022; Keirouz, 1990; Öztabak, 2018; Renati et al., 2016).

3.1.2. *Confirmatory factor analysis findings*

The anxiety scale, previously identified as having five dimensions in the EFA, was tested using CFA with a different sample of 250 participants. Based on the analysis results, the goodness-of-fit index was examined and covariance was depicted between Items 1 and 5 and Items 26 and 25 in the model presented in Figure 2.

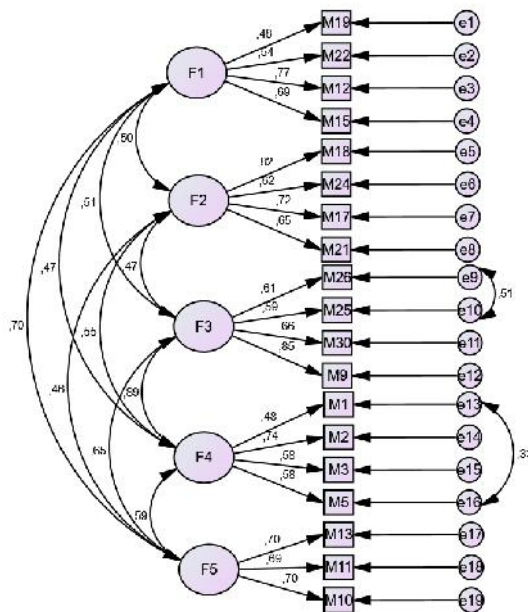**Figure 2.** *The model for Confirmatory Factor Analysis of the scale items.*

Table 5. *The Fit Values obtained in CFA.*

N	χ^2	df	χ^2/df	RMSEA	AGFI	AIC	NFI	GFI	CFI	IFI	TLI
250	242.705	140	1.734	.054	.880	342.705	.866	.912	.937	.939	.923

A structural equation model was constructed using the AMOS 24.00 software. When examining the goodness-of-fit index of the five-factor model, it can be observed that χ^2/df = 1.734; RMSEA=0.054; AGFI= 0.880; GFI= 0.912; NFI= 0.866; CFI= 0.937; IFI= 0.939; TLI= 0.923 (Table 5). In the literature, a χ^2/df value of 2.5 and below is considered a perfect fit, while GFI, NFI, CFI, IFI, and TLI values are greater than .90, AGFI value is greater than .85, and RMSEA value below .08 is considered a good fit (Brown, 2006; Byrne, 2016; Hooper et al., 2008; Hu & Bentler, 1999; Kline, 2010; Schermelleh-Engel et al., 2003;).

According to the goodness-of-fit values in Table 5, it can be stated that the NFI values are slightly below the acceptable threshold, while RMSEA, AGFI, GFI, CFI, IFI, and TLI fit indices indicate an acceptable fit. Additionally, the observed fit values for χ^2/df indicate an excellent fit. It can be concluded that the model created using the obtained data exhibits a good fit.

3.2. Findings Regarding the Reliability of the Scale

In light of the second research question of this study, the reliability of the scale's items and factors was analyzed using Cronbach's alpha coefficient, test-retest method, item-total score correlation, and item discriminability method by comparing the 27% sub-upper groups. In terms of the reliability of the scale, Cronbach's alpha coefficient value should be equal to or greater than .70 (Frankel & Wallen, 2008).

Table 6. *Reliability coefficients of the Factors.*

Factors	Cronbach's Alpha ( )	Number of Items
Anxiety related to emotional development	.734	4
Anxiety related to difficulties in social development and interaction	.807	4
Anxiety related to educational opportunities and possibilities	.811	4
Anxiety related to academic development	.719	4
Anxiety related to high expectations	.751	3
Total	.890	19

Based on the analysis results, the reliability coefficients for the factors were calculated as follows: 1st Factor (anxiety related to emotional development) .734; 2nd Factor (anxiety related to difficulties in social development and interaction) .807; 3rd Factor (anxiety related to educational opportunities and possibilities) .811; 4th Factor (anxiety related to academic development) .719; 5th Factor (anxiety related to high expectations) .751. The Cronbach's alpha coefficient for the overall scale was .890 (Table 6). The reliability coefficient of the scale and its factors being above .70 indicates that it is a reliable measurement tool.

Table 7. *Results of item analysis.*

Factors	Item No	Item-Total Correlation	t upper %27- lower%27
Anxiety related to emotional development	19	.443	8.99*
	22	433	10.97*
	12	.566	14.03*
	15	.490	10.94*
Anxiety related to difficulties in social development and interaction	18	.570	12.33*
	24	.511	10.48*
	17	.513	11.53*
	21	.519	11.01*
Anxiety related to educational opportunities and possibilities	26	.537	10.70*
	25	.557	10.99*
	30	.560	10.78*
	9	.597	13.17*
Anxiety related to academic development	1	.470	10.26*
	2	.538	11.68*
	3	.434	10.53*
	5	.482	10.06*
Anxiety related to high expectations	13	.539	12.43*
	11	.496	12.82*
	10	.542	12.12*

*$p< .001$

As shown in Table 7, it can be observed that the total correlation values of the items in the scale range from .433 to .597, and the *t*-values were significant ($p<.001$). A total item correlation value of .30 or higher indicates a high internal consistency of the scale items (Frankel & Wallen,

2008). This suggests that the scale items sample the same behaviors, and that the measurement tool differentiates the anxieties of parents with gifted children.

3.2.1. *Item discrimination analysis*

An analysis was conducted using an independent sample t-test to examine the item discrimination property of the scale. A comparison was made between the anxiety scores of the 27% sub-upper groups (Table 8).

Table 8. *Item discrimination analysis.*

| Measure	N	x	Std deviation	df	t	p
1 (upper %27)	149	81.04	5.40	296	31.18	0.00
2 (lower %27)	149	49.75	8.57			

The analysis results indicated a statistically significant difference between the 27% sub-upper groups (t= 31.18, p= 0.00, Table 8). The developed scale is capable of distinguishing the upper and lower groups from each other significantly. It can be said that the anxiety scale for parents of gifted children has high distinctiveness power.

3.2.2 *Test-retest method*

The Parental Anxiety Scale was re-administered to the same parents (n= 50) within a specific time interval. In the second application 50 participants responded. Bonett and Wright (2014) suggest that 30 samples may be sufficient to measure reliability if there is a strong relationship between the scale items. The test-retest reliability of the scale was calculated using the Pearson correlation coefficient. The correlation coefficients were calculated as .724 for Factor 1, .685 for Factor 2, .590 for Factor 3, .677 for Factor 4, .571 for Factor 5, and .775 for the overall scale (p<.01). In the literature, it has been indicated that the correlation coefficient should be at least .70 for the scale to demonstrate stability (Özdamar, 2004, as cited in Akbulut, 2010). Thus, according to the test-retest method, the Parental Anxiety Scale has exhibited the characteristics of a reliable measurement tool.

In line with the conducted analysis studies, it has been concluded that the anxiety scale for parents of gifted children is a valid and reliable measurement tool. The subdimensions of the scale, as indicated in Figure 3, align with the third research question of this study.

Figure 3. *Subdimensions of anxiety scale for parents of gifted child.*
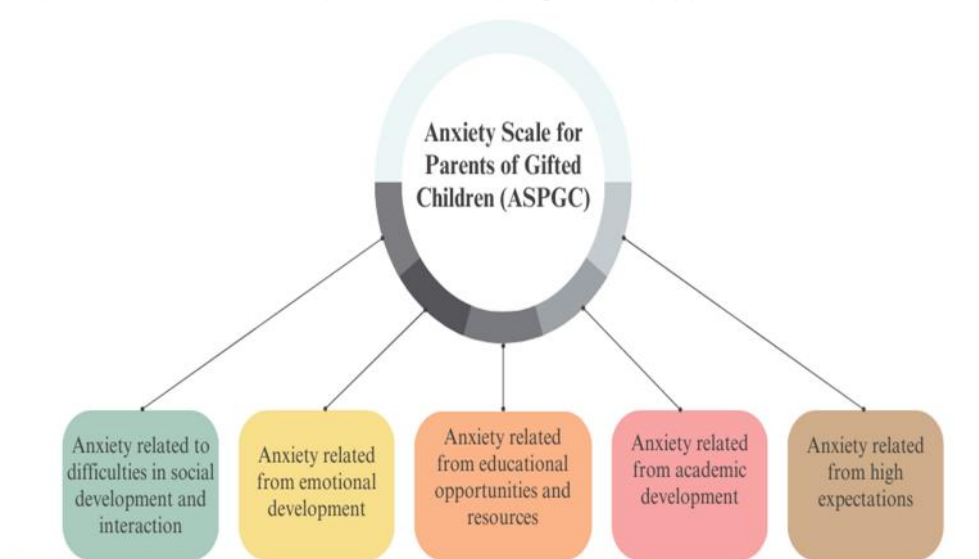
4. DISCUSSION and CONCLUSION

This study aimed to create a valid and reliable measurement tool to measure the anxiety levels of parents of gifted children. A validity and reliability study was conducted for the developed scale with the participation of 550 parents of gifted children. The 43 items in the draft of the scale were evaluated in light of the opinions of five experts, and on this basis, 12 items were removed from the scale. As a result of this process, the content validity index of the scale was found to be .92, which indicates high content validity (Lynn, 1968) and that the scale items cover issues related to the anxiety of parents with gifted children. A pilot study was conducted with 10 parents on the 31-item trial form, and based on feedback, another item that was unclear and vague was removed.

To test the construct validity of the scale, both EFA and CFA were conducted. The KMO value was .918, indicating that the sample size was adequate for EFA. Additionally, Bartlett's test of sphericity yielded a significant result, further confirming the suitability of the sample for factor analysis. Based on the oblique rotation analysis, a five-factor structure emerged. Care was taken to ensure that each factor consisted of at least two items. These factors were labeled as anxiety related to difficulties in social development and interaction, anxiety related to emotional development, anxiety related to educational opportunities and resources, anxiety related to academic development, and anxiety related to high expectations.

The EFA results indicated that the five factors accounted for 63.30% of the scale's variance. Consequently, items 6th, 29th, 7th, 8th and 23rd items were removed due to overlap; the 16th, 14th and 27th items had factor loadings below .40, and items 4th, 20th and 28th items were removed as their content did not match the respective factor.

To confirm the five-factor model, CFA was conducted. The fit indices of the five-factor model were as follows: $^2/df$ =1.734; RMSEA = 0.054; AGFI = 0.880; GFI = 0.912; NFI = 0.866; CFI = 0.937; IFI = 0.939; TLI = 0.923. These values suggest a good fit for the model. The reliability coefficient of the overall scale was calculated as .890, indicating satisfactory internal consistency. The results of the internal consistency analysis for each subscale were as follows: first factor= .734 second factor= .807, third factor= .811, fourth factor= .719, fifth factor= .751. These values reflect acceptable levels of internal consistency for each factor.

Through the conducted analyses, the final version of the scale consisted of 19 items and five dimensions. These dimensions align with the frequently expressed anxieties and challenges reported by parents of gifted children in the literature (Bildiren, 2011; Keirouz, 1990; Moon & Hall, 1998; Shichtman, 1999; Sutherland, 2008; Sutherland, 2008). In a qualitative study conducted by Renati et al. (2016), the researchers examined the anxiety factors experienced by 49 parents of gifted children. The study identified three main categories of parental concerns: individual-related problems in meeting the needs of gifted children, family related problems, and social difficulties (e.g., lack of peer and school support). According to Ihlamur (2017), parents struggle with the characteristics of gifted children. Öztabak (2018) identified the concerns experienced by parents of gifted children in various dimensions, including family dynamics, sibling relationships, environmental factors, and developmental characteristics of gifted children. Families may require additional time and resources to meet the needs of gifted children. Additionally, parents may face challenges related to gifted children (Alberta Learning, 2004). In a study addressing the difficulties of parents with gifted children, Karakuş (2010) found that parents expressed challenges related to teachers with high expectations and lack of knowledge about gifted education; difficulties in social interactions of gifted children with peers, environment, and siblings; reluctance to do homework; failure to develop study habits; and parents' inability to meet the needs of children regarding their areas of interest. Akarsu (2004) described the challenges experienced by parents of gifted children in four categories: dealing with the family's interaction with the environment and school, coping with their gifted child, and managing differences within the family. In a study by Dalgıç (2017) investigating

the challenges faced by parents of gifted children aged 3-6, the findings showed that parents primarily encountered problems related to the social-emotional characteristics of gifted individuals and inadequacies in formal educational institutions. Studies have shown that the concerns of gifted children's parents are addressed in different dimensions or in a single dimension. These studies showed that the scale is consistent and comprehensive with its items and dimensions, as can be seen from the analysis results.

The difficulties experienced by parents regarding their gifted children can affect their anxiety levels; having anxious parents increases the anxiety of gifted children (Yazıcı, 2019). Considering the potential effects of parental anxiety on gifted children, the scale developed can test the effectiveness of family education studies for parents with high anxiety. Additionally, it may enable the preparation of comprehensive intervention programs that focus on parental anxiety. Accurately measuring parental concerns can also provide practical results in the psychological counseling process.

This study developed a scale to determine the anxiety levels of parents of gifted children studying at the secondary school level. The usability of the scale is based on the results of validity and reliability analyses, but it has some limitations. One of these limitations is that the participants who completed the scale had different socioeconomic levels and educational backgrounds. Another limitation is the difficulty in reaching parents who have gifted children.

It may be recommended to use different measurement tools to diversify the data sources in counseling and guidance activities for parents. In future studies, the current scale may be used to test the effectiveness of family education studies aimed at reducing anxiety experienced by parents of gifted children, developing competent parenting skills, and increasing family relationships.

Declaration of Conflicting Interests and Ethics

The authors declare no conflict of interest. This research study complies with research publishing ethics. The scientific and legal responsibility for manuscripts published in IJATE belongs to the authors. **Ethics Committee Number**: Istanbul University-Cerrahpasa Social and Humanities Research Ethics Committee ethical approval number 2023/4 dated 10.01.2023.

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REFERENCES

Akarsu, F. (2004). *Üstün yetenekli çocukların ailelerinin sorunları [Problems of families of gifted children]*. In M.R. irin, A. Kulaksızo lu, & A.E. Bilgili (Eds.), I. Türkiye Üstün Yetenekli Çocuklar Kongresi Seçilmi Makaleler Kitabı [1st Turkish Gifted Children Congress Selected Articles Book]. 447-460. Children's Foundation.

Akbulut, Y. (2010). *Sosyal bilimlerde SPSS uygulamaları [SPSS applications in social sciences]*. Ideal Kültür.

Alisinano lu, F., & Uluta , . (2003). Çocukların kaygı düzeyleri ile annelerinin kaygı düzeyleri arasındaki ili kinin incelenmesi [A study on the relationship between children's anxiety levels and their mother's anxiety levels]. *Education and Science, 28*(128), 65-71.

Alberta Learning (2004). *A handbook for parents of children who are gifted and talented.* Alberta Learning.

Avcı, G., & Sakallı-Demirok, M. (2022). Özel yetenekli olmak ve özel yetenekli çocu a sahip olmak: Özel yetenekli birey ve ebeveyn görü leri [Being talented and having a special talented child: Opinions of special talented individuals and parents]. *Journal of Interdisciplinary Educational Research*, *6*(11), 39-54.

Aydın, Y.E., & Bu a, A. (2020). Özel yetenekli çocukların ebeveynlerinin akılcı olmayan inançları ve ebeveyn yetkinliklerinin incelenmesi [Investigation of the parents' irrational beliefs and parental self-efficacy of parents of gifted children]. *OPUS International Journal of Society Researches*, *15*(22), 1373-1407. https://doi.org/10.2646 6/opus.640449

Aydo an, D., & Özbay, Y. (2017). Ebeveynlik stres ölçe i geçerlik ve güvenirlik çalı ması [The parenting stress scale: The validity and the reliability study]. *International Journal of Early Childhood Education Studies, 2*(2), 24-38. http://ijeces.hku.edu.tr/tr/download/ article-file/359422

Berry, J.O., & Jones, W.H. (1995). Parental stress scale. Initial psychometric evidence. *Journal of Social and Personal Relationships*, *12*(3), 463-472. https://doi.org/10.1177/02654075 95123009

Bildiren, A. (2011). *Üstün yetenekli çocuklar aileler ve ö retmenler için bir kılavuz [A guide for gifted children, families and teachers]*. Dogan.

Bilgin, M. (2017). Ergenin be faktör ki ilik özellikleri ile sosyal yetkinlik, bili sel hatalar ve anne baba be faktör ki ilik özellikleri ili kisi [The relationship between five personality traits of adolescent and social self-efficacy, cognitive errors and five personality traits of parents]. *Gaziantep University Journal of Social Sciences, 16*(1), 230-250. http://doi. org/10.21547/jss.284859

Bishop, B. (2012) *Parenting stress in mothers of gifted and typical children* [Master's thesis, University of Alberta]. Educational & Research Archieve.

Bonett, D.G., & Wright, T.A. (2014). Cronbach's alpha reliability: Interval estimation, hypothesistesting, and sample size planning. *Journal of Organizational Behavior*, 36(1), 3-15. https://doi.org/10.1002/job.1960

Brown, T.A. (2006). *Confirmatory factor analysis: For applied research*. Guilford Press.

Bryne, M.B. (2016). *Structural equation modeling with AMOS. Basic concepts, applications and programming.* (3rd ed.). Routledge

Clark, B. (2013). *Üstün zekalı olarak büyümek evde ve okulda çocukların potansiyellerini geli tirmek [Growing up gifted: Developing the potential of children at school and at home]*. (Ü. O urlu, & F. Kaya, Trans.). Nobel.

Cohen, S., Kamarck, T., & Mermelstein, R. (1994). Perceived stress scale. *Measuring Stress: A Guide for Health and Social Scientists*, *10*(2), 1-2.

Cohen, L., Manion, L., & Morrison, K. (2000). *Research methods in education* (5th ed.). Routledge.

Comrey, A.L., & Lee, H.B. (1992). *A first course in factor analysis* (2nd ed.). Erlbaum.

Costa, P.T., & McCrae, R.R. (2012). The five-factor model, five-factor theory, and interpersonal psychology. *Handbook of Interpersonal Psychology*, 91-104. https://doi.org/10.1002/9781118001868.ch6

Çamdeviren, . (2014). *Bilim ve sanat merkezine (B LSEM) devam eden üstün yetenekli çocukların anne babalarının kar ıla tıkları güçlükler: Sakarya ili örne i. [The difficulties that parents of the gifted children attending Science and Arts Center encounter]* (Publication no. 353104) [Master's thesis, Sakarya University]. Council of Higher Educational Thesis Center.

Çekiç, A., Akba , T., & Hamamcı, Z. (2015). Anne Baba Stres Ölçe i'nin Türkçe'ye uyarlaması: geçerlik ve güvenirlik çalı ması [Adaptation of Parenting Stress Index into Turkish: The validity and the reliability study]. *Gaziantep University Journal of Social Sciences, 14*(3), 647-667. https://doi.org/10.21547/jss.256755

Dalgıç, N. . (2017). *Üstün yetenekli veya zekâlı çocu a sahip anne-babaların kar ıla tıkları sorunların ve beklentilerinin belirlenmesi [Determining the problems and expectations faced by parents of gifted or intelligent children]* [Master's thesis, Eastern Mediterranean University]. Eastern Mediterranean University Libraries.

Deater-Deckard, K. (1998). Parenting stress and child adjustment: Some old hypotheses and new questions. *Clinical Psychology: Science and Practice, 5*(3), 314-332. https://doi.org/10.1111/j.1468-2850.1998.tb00152.x

Deniz, M.E., Dilmaç, B., & Arıcak, O.T. (2009). Engelli çocu a sahip olan ebeveynlerin durumluk-sürekli kaygı ve ya am doyumlarının incelenmesi [An analysis of life satisfaction and state-trait anxiety of the parents with handicapped children]. *International Journal of Human Sciences*, *6*(1), 953-968. https://www.j-humansciences.com/ojs/index.php/IJHS/article/view/727/389

Dettman, D.F., & Colangelo, N. (1980). A functional model for counseling parents of gifted children. *Gifted Child Quarterly*, *24*(4), 158-161. https://doi.org/10.1177/0016986280024004

Dost, M.T., Aytaç, M., & Uysal, N.K. (2019). Ebeveynlik biçiminin ki ilik özellikleri, benlik saygisi ve ya am doyumunu yordama gücü [Predictive power of parenting styles on personality traits, selfesteem, and life satisfation]. *Electronic Journal of Social Sciences*, *18*(71), 1146-1165. https://doi.org/10.17755/esosder.472964

Eren, F., Ömerelli-Çete, A., Avcıl, S., & Baykara, B. (2018). Üstün yetenekli çocuklarda ve ailelerinde duygusal ve davranı sal özellikler [Emotional and behavioral characteristics of gifted children and their families]. *Archives of Neuropsychiatry, 55*(2), 105-112. https://doi.org/10.5152/npa.2017.12731

Ero lu-Garip, S., Karada , F., & Yıldız-Demirta , V. (2022). Özel yetenekli çocukların ebeveyni olmak ve erken çocuklukta özel yetenekli olmak: Ebeveyn görü leri [Parenting of gifted children and being gifted in early childhood: Parental views]. *Trakya University Journal of Social Science*, *24*(1), 197-226. https://doi.org/10.26468/trakyasobed.885478

Field, A. (2009). *Discovering statistics using SPSS*. SAGE.

Francis, S.E. (2014). The role of parental anxiety sensitivity in parent reports of child anxiety in treatment seeking families. *Clinical Child Psychology and Psychiatry*, *19*(1), 111-124. https://doi.org/10.1177/1359104512470055

Frankel, J.R., & Wallen, N.E. (2008*). How to design and evaluate research in education.* McGraw Hill Higher Education.

Guthrie, K.H. (2019). "Nothing is ever easy": Parent perceptions of intensity in their gifted adolescent children. *The Qualitative Report, 24*(8), 2080-2101. https://doi.org/10.46743/2160-3715/2019.3598

Hair, J.F.J., Black, W.C., Babin, B.J., & Anderson, R.E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.

Hooper, D., Coughlan, J., & Mullen, M.R. (2008). Structural equation modelling: Guidelines for determining model fit. *The Electronic Journal of Business Research Methods, 6*(1), 53 –60. https://doi.org/10.21427/D7CF7R

Ho, R. (2006). *Handbook of univariate and multivariate data analysis and interpretation with SPSS*. Chapman and Hall/CRC.

Hu, L.T., & Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1-55. https://doi.org/10.1080/10705519909540118

Hutcheson, G., & Sofroniou, N. (2006). *The multivariate social scientist: introductory statistics using generalized linear models* (2nd ed.). Sage.

Ihlamur, . (2017). *Üstün yetenekli çocuklara sahip ailelerin danı manlık ihtiyaçlarının saptanması [Identification of the requirements for counseling for the families with gifted and talented children]* (Publication no. 472165) [Master thesis, stanbul Ticaret University]. Council of Higher Educational Thesis Center.

Johnsen, S.K. (2017). School choice and gifted education. *Gifted Child Today, 40*(2), 69-69. https://doi.org/10.1177/1076217517691194

Kaner, S. (2001). Aile stresini de erlendirme ölçe i (The questionnaire on resource and stress-F) faktör yapısı, güvenirlik ve geçerlik çalı maları [Factor structure, reliability and validity studies of the Family Stress Assessment Scale]. *Ankara University Journal of Faculty of Educational Sciences, 34*(1), 1-10. https://doi.org/10.1501/Egifak_0000000039

Karaku , F. (2010). Üstün yetenekli çocukların anne babalarının kar ıla tıkları güçlükler [Difficulties that families of gifted students face]. *Mersin University Journal of The Faculty of Education*, *6*(1), 127-144. https://doi.org/10.17860/efd.89448

Keirouz, K.S. (1990). Concerns of parents of gifted children: A research review. *Gifted Child Quarterly*, *34*(2), 56-63. https://doi.org/10.1177/001698629003400202

Kline, R.B. (2010). *Principles and practice of structural equation modeling*. Guilford Press

Koca, A. (2017). *Engelli çocu a sahip olan ve engelli çocu a sahip olmayan annelerin ölüm kaygısı ve durumluk sürekli kaygı düzeyleri arasındaki farklıla manın incelenmesi [Investigation of the differences between death anxiety and state-trait anxiety levels of mothers with a disabled child and without a disabled child]* (Publication no. 486225) [Master thesis, Hasan Kalyoncu University]. Council of Higher Educational Thesis Center.

Köksal, A. (2020). Özel yetenekli bir çocu un ebeveyni olmak [Being a parent of a gifted child]. *Çocuk ve Medeniyet*, *5*(10), 495-502. https://doi.org/10.47646/CMD.2020.220

Lawshe, C.H. (1975). A quantitative approach to content validity. *Personnel Psychology, 28*(4), 563-575. https://doi.org/10.1111/j.1744-6570.1975.tb01393.x

Lynn, M.R. (1986). Determination and quantification of content validity. *Nursing Research*, *35*(6), 382-386. https://doi.org/10.1097/00006199-198611000-00017

McMann, N., & Oliver, R. (1988). Problems in families with gifted children: Implications for counselors. *Journal of Counseling and Development*, *66*(6), 275-278. https://doi.org/10.1002/j.1556-6676.1988.tb00867.x

Moon, S.M., & Hall, A.S. (1998). Family therapy with intellectually and creatively gifted children. *Journal of Marital and Family Therapy*, *24*(1), 59-80. https://doi.org/10.1111/j.1752-0606.1998.tb01063.x

Moon, S.M. (Ed.). (2004). *Social/emotional issues, underachievement, and counseling of gifted and talented students.* Corwin Press.

O urlu U., & Yaman Y. (2013). Ebeveynlerin üstün zekalı ve yetenekli çocuklarıyla ilgili rehberlik ihtiyaçları [Guidance needs of gifted and talented children's parents]. *Turkish Journal of Giftedness and Education*, *3*(2), 81-94.

Öner, N., & Le Compte, A. (1983). *Durumluk-Sürekli Kaygı Envanteri El Kitabı [Trait-trait anxiety inventory manual].* Boaziçi University Press.

Özmen, S.K., & Özmen, A. (2012). Anne Baba Stres Ölçei'nin gelitirilmesi [Parent Stress Scale development]. *Milli Eitim Dergisi, 42*(196), 20-35.

Öztabak, M.Ü. (2018). Özel/üstün yetenekli çocukların ailelerine yönelik rehberlik ve psikolojik danımanlık [Guidance and psychological counseling for gifted/talented children's parent]. *Journal of Educational and Humanities*: *Theory and Practice*, *9*(17), 79-106.

Park, H.S., Dailey, R., & Lemus, D. (2002). The use of exploratory factor analysis and principal component analysis in communication research. *Human Communication Research, 28*(4), 562-577. https://doi.org/10.1111/j.1468-2958.2002.tb00824.x

Renati, R., Bonfiglio, N.S., & Pfeiffer, S. (2016). Challenges raising a gifted child: Stress and resilience factors within the family. *Gifted Education International, 33*(2), 145-162. https://doi.org/10.1177/0261429416650948

Salkind, N. (2015). *statistikten nefret edenler için istatistik* [Statistics for people who (think they) hate statistics]. (A. Çuhadarolu, Trans.). Pegem.

Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online, 8*(2), 23-74.

Shichtman, D. (1999). *Concerns and problems of parents of academically successful gifted children* (Publication No: 9939553) [Doctoral dissertation, Columbia University]. ProQuest Dissertation & Theses Global.

Spielberger, C.D., Gorsuch, R.C., & Luschene. R.E. (1970). *Manual for the State-Trait Anxiety Inventory.* Consulting Psychologists Press.

Spitzer, R.L., Kroenke, K., Williams, J.B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of Internal Medicine*, *166*(10), 1092-1097. https://doi.org/10.1001/archinte.166.10.1092

Sutherland, M. (2008). *Developing the gifted and talented young learner.* Sage Publication.

Tabachnick, B., & Fidell, L. (2007*). Using multivariate statistics*. Allyn & Bacon.

Thompson, B. (2004). Exploratory and confirmatory factor analysis: Understanding concepts and applications. *Applied Psychological Measurement, 31*(3), 245-248. https://doi.org/10.1177/0146621606290168

Webb, J.T. (1993). Nurturing social-emotional development of gifted children. In K.A. Heller, F.J. Mönks, & A.H. Passow (Eds.), *International handbook of research and development of giftedness and talent* (pp. 525–538). Pergamon Press.

Yazıcı, E. (2019). *Level and sources of anxiety affecting gifted students who attend science and art centers* (Publication no. 588386) [Master's thesis, Bilkent University]. Council of Higher Educational Thesis Center.

Yıldız, S., & Altay, N. (2021). The parenting attitudes and effects on their gifted children: A literature review. *Journal for the Education of Gifted Young Scientists, 9*(2), 123-132. http://dx.doi.org/10.17478/jegys.864037

Yoo, J.E., & Moon, S.M. (2006). Counseling needs of gifted students: An analysis of intake forms at a university-based counseling center. *Gifted Child Quarterly*, *50*(1), 52-61. https://doi.org/10.1177/001698620605000106