THE SCALE OF DETERMINING THE PROBLEM BEHAVIORS OF CHILDREN IN PRESCHOOL PERIOD: A VALIDITY AND RELIABILITY STUDY

Abstract: This study was aimed to develop a scale to determine the problem behaviors of 3-6 aged preschool children. A systematic process was carried out during the development of the scale. A total of 305 preschool teachers filled in the scale development study. Based on the results of exploratory factor analysis (EFA), it was identified that the scale consists of 30 items and three factors, explaining 52.13% of the total variance. These factors are named academic skills problems, peer relationship problems, and developmental-behavioral problems in accordance with the literature. Confirmatory factor analysis (CFA) was used to examine whether the collected data confirmed the determining factor structure. The whole scale's Cronbach's alpha reliability coefficient was found as .94. Cronbach alpha coefficients were .91 for "academic skills problems", .89 for "peer relationships problems", and .83 for "developmental behavior problems". As a result of the analysis, the scale is valid and reliable to determine the problem behaviors of preschool children.

Keywords: Problem behaviors, scale development, preschool period

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DOI: 10.52963/PERR_Biruni_V10.N3.22

INTRODUCTION

Behaviors below or above the social acceptance level can be expressed as the problem behavior. Kanlıkılıçer (2005) has defined the problem behaviors as behaviors that are harmful to the individual and their environment and cause the individual to be kept away from social environments. Gimpel and Holland (2003) classified problem behaviors into two groups: internalizing problem behaviors and externalizing problem behaviors. Being anxious, shy, and nervous can be classified as internalizing problem behaviors. On the other hand, externalizing problem behaviors can include aggressiveness, resistance, anti-social behaviors, and hyperactivity (Campbell, 1995; Kaya & Deniz, 2020).

In the preschool period, children's behavior that causes problems for themselves or their environment is generally defined as problem behavior (Yumuş, 2013). Problem behaviors such as non-obedience, stubbornness, jealousy, shyness, lying, aggression, swearing, and spoiling can be observed during sleep, eating, and cleaning times of preschool children (Alisinanoğlu & Kesicioğlu, 2010). In addition to these behaviors, behaviors such as hitting, biting, and throwing objects around can be seen in children (Yumuş, 2013). Problem behaviors decrease the acceptance level of children by their social environment. The child that is not accepted by his/her environment faces many developmental and psychological problems (Gültekin Akduman, Günindi & Türkoğlu, 2015). The learning or development of children who display problem behaviors may be impeded by exposure to the negative effects of their behavior (Sugawara & Cunningham, 1988). Preschool children who display aggressive behavior face more social difficulties and experience disciplinary problems in later school years (Ladd, Herald & Andrews, 2006). For instance, the friendship relations of aggressive children are frictional and tense (Yaşar Ekici, 2013). When it is late to prevent children's external problem behaviors that can be observed by the environment, serious behavioral disorders can occur in children (Topçu Bilir & Sop, 2016). Problem behaviors seen in the preschool period appear as the cause of more serious problem behaviors such as crime, aggression, antisocial behavior, and substance addiction in later years (McCabe & Frede, 2007).

The developmental period of the child should be taken into account to determine whether the behaviors expressed as problem behavior are problematic. At the same time, it should be determined how often the behaviors examined as problem behaviors are repeated and the level of behavior severity (Gültekin Akduman, Günindi & Türkoğlu, 2015). Teacher and parent assessments are considered important in determining and classifying children's problem behaviors (Kaner & Uçak-Çiçekçi, 2000).

In Gültekin Akduman, Günindi, and Türkoğlu (2015)'s study, the relationship between behavioral problems and social skills levels of preschool children was examined. It was concluded that the problem behavior levels of boys are higher than girls, and that the problem behavior levels of children who grow up in an extended family type are significantly higher than their peers who grow up in a nuclear family type. Contrary to this result, it contradicts a study conducted to determine the effects of various familial factors on the social behavior problems of 6-year-old children. As a result of the research, children's social behavior problem scores do not differ according to gender and family type (Seven, 2007).

The information obtained from the teachers has a critical function in the scales about the behavior of preschool children (Keleş, 2016). There are four types of problem behaviors that disturb teachers (Algozzine, 1977). The researcher identified and named these problem behaviors as social immaturity, motorically disturbing behaviors, social defiance, and socialized delinquent behaviors. While social immaturity includes behaviors such as anxiety, withdrawal, and shyness; social defiance consists of destructive, aggressive, and disobedient behaviors.

In a study that aims to determine the most common behavioral problems in classrooms, 13 preschool teachers were interviewed. As a result of the study, 11 problem behaviors emerged

and teachers stated that children with problem behaviors had tantrums and crying; yelling and stubborn behaviors were observed in children while having anger attacks (Güder, Alabay & Güner, 2018). In another study conducted by Baş & Şimay (2013), 15 preschool teachers stated that the most problem behaviors they encounter in educational institutions are children not wanting to participate in activities, exhibiting aggressive behaviors, swearing, and not adapting to a regulated environment.

As a result of examining the literature, there are some scales developed to measure problem behaviors of preschool children. Goodman (1997) developed the Strengths and Difficulties Questionnaire SDQ, which consists of five dimensions and 25 items, in which the psychological symptoms of children are examined. Questionnaire forms are prepared for the 4-16 age group. Parents, teachers, and adolescents are in the 11-16 age group can fill the questionnaire forms. The dimensions of the questionnaire named conduct problems, emotional symptoms, peer relationship problems, hyperactivity/inattention, and prosocial behavior. The adaptation study of the questionnaire to Turkish culture was conducted by Güvenir, Özbek, Baykara, Arkar, Şentürk, and İncekaş (2008), and the data on the behavior of children aged 4-16 were obtained from mothers. Dursun, Öğütlü, and Esin (2020) conducted a study to adapt the psychometric properties of the Strengths and Difficulties Questionnaire (SDQ) for children aged 2-4. Based on the result of the study, the SDQ (2-4) scale was found to be valid and reliable in the Turkish language.

In another study, Kaner and Uçak-Çiçekçi (2000) made a Turkish adaptation study of the Revised Behavioral Problems Checklist developed by Quay and Peterson (1996) to identify the behavioral problems of children and adolescents aged 5-18 in schools and mental health centers. As a result of the study, three dimensions emerged: depression-attention deficit, socialized aggression behavior disorder, and hyperactivity-impulsivity. As a result of validity and reliability analyzes, it has been proven that the 56-item measurement tool can be used in educational settings and as a diagnostic tool.

Kanlıkılıçer (2005) has also adapted the Preschool Behavior Questionnaire (PBQ), which was developed by Behar (1976), to Turkish to determine the behavioral problems of preschool children. The Preschool Problems Screening Scale (ATSS) obtained as a result of the adaptation study is filled in by the teachers of 3-6 years old preschool children. The scale includes three factors and 30 items and was named as aggressive-belligerent, weepy-anxious, and careless-excessively mobile.

Alisinanoğlu and Özbey (2009) have adapted the Preschool and Kindergarden Behaviour Scala (PKBS–2), which was revised by Merrell (2003). The scale consists of two independent scales: Social Skill Scale and Problem Behavior Scale. Higher scores on the problem behavior scale indicate that children have more problem behaviors. Problem behaviour scale separated into four factors, they were named as externalizing problems, antisocial, internalizing problems, and self-centered. Teachers, families and social workers can use these scales to measure social skills and problem behaviors of children.

Sucuoğlu (2003) conducted examined the psychometric properties of the Turkish version of the Problem Behavior Checklist, problem behaviors of mentally disabled individuals between the ages of 10-25 were evaluated by their teachers. The checklist includes five factors and they were named as hyperactivity, lethargy, stereotypic behavior, self-injury, and other behaviors.

The fact that teachers are in an excellent position to observe children's behavior continuously for extended periods, in a variety of settings, and a non-intrusive manner (Phillips, 1968). Preschool teachers have an important role in adapting children to society, as they have the opportunity to intervene when they see children's problem behaviors (Özgün, 2016). There is a need for a measurement tool to be used by preschool teachers to determine the problem behavior of children. Since the adaptation studies of the scales in the literature are old and not culturally unique, it is necessary to determine problem behaviors appropriate to today's conditions and

culture. The fact that they are mostly adaptation studies has created the need for original study. This scale, developed for this purpose, is expected to contribute to the literature.

METHOD

This study was carried out to develop a scale that could evaluate the problem behaviors of preschool children by preschool teachers. In that sense, The Scale of Determining the Problem Behaviors of Children in Preschool Period (SDPBCPP) was developed. Participants of the study, the process of developing the scale, data collection processes, and data analysis procedures were mentioned in the related heading.

PARTICIPANTS

The working group was composed of a total of 305 volunteering preschool teachers who working in schools affiliated with the Ministry of National Education. Tavşancıl (2014) claims that a valid study needs to have a working group size that is five times or more than the number of items. Accordingly, it can be said that this criterion was fulfilled because the used scale consisted of 56 items, a number that is almost one sixth of the total teacher number. Demographics and other background information of participants can be seen in Table 1.

Table 1. Demographic Characteristics

Variable	Categories	f	%
Gender	Female	269	88.2
	Male	36	11.8
Age	20-24	25	8.2
	25-29	100	32.8
	30-34	47	15.4
	35-39	70	23.0
	40-44	37	12.1
	45-49	18	5.9
	+50	8	2.6
Professional Seniority	0-4	103	33.8
	5-9	66	21.6
	10-14	78	25.6
	15-19	23	7.5
	20-24	26	8.5
	+25	9	3.0
Geographical Region	Mediterranean	121	39.67
	Southeast Anatolia	66	21.63
	Marmara	64	20.98
	Egean	19	6.22
	Eastern Anatolia	18	5.90
	Central Anatolian	11	3.60
	Black Sea	6	1.96
Total		305	100

As seen in Table 1, 88.2% of the study group (n = 269) were female and 11.8% (n = 36) were male. Considering the ages of the teachers in the study group, there were 25 teachers (8.2%) between the ages of 20-24, 100 (32.8%) between the ages of 25-29, 47 (15.4%) between the ages of 30-34, 70 (23%) between the ages of 35-39, 37 (12.1%) teachers between the ages of 40-44, 18 (5.9%), and 8 (2.6%) between the ages of 45-49. Considering the professional seniority of the teachers in the study group, it is seen that there were 103 teachers (33.8%) between 0-4 years, 66 (21.6%) 5-9 years, 78 (25.6%) between 10-14 years, 23 (%7.5) between 15-19 years, 26 (8.5%) between 20-24 years, and 9 (3%) with 25 years or more seniority. Considering the regions where participants work, it is seen that 121 (39.67%) teachers work in

the Mediterranean Region, 66 (21.63%) teachers work in the Southeastern Anatolia Region, 64 (20.98%) teachers work in the Marmara Region, 19 (6.22%) teachers work in Egean Region, 18 (5.9%) teachers work in the Eastern Anatolia Region, 11 (3.60%) teachers work in the Central Anatolian Region and 6 (1.96%) teachers work in Black Sea Region.

THE DEVELOPMENT PROCESS OF THE SCALE

A systematic process was followed in the development of a valid and reliable measurement tool to be used in determining the problem behaviors of preschool children. First, the relevant literature was reviewed. Taking into account the theoretical framework, an item pool consisting of 68 items was prepared. Secondly, to determine the content validity, the opinions of three experts from the field of Preschool Education, an expert from the field of Measurement and Evaluation, and an expert from the field of Guidance and Psychological Counseling were obtained through form. The scale items were examined by an expert in Turkish Education to ensure face validity. As a result of expert opinions, 12 items that meant the same, were misleading, and seemed problematic were removed from the scale form. Following the recommendation of the Turkish Education expert, the expression 'child' at the beginning of the items was removed. A draft scale with 56 items was created to be implemented by making the suggested corrections. Since there is no scale that can be used as a criterion, criterion validity has not been examined. The draft scale was graded in four-point Likert type as "Always (4)", "Frequently (3)", "Occasional (2)", and "Never (1)". Participants answered the items on a Likert-type scale with four categories varying from never to always intervals. There are no adverse items that were reverse coded in the scale.

DATA COLLECTION PROCESS

The said scale was created in electronic medium and participants received a link to fill the form online. Participation to study was on voluntary basis and a consent form was obtained from each participant. 13 teachers who did not give their consent left the study without seeing the questions. Participants needed approximately 10 minutes to fill the form. The data collection process started in October of the 2020-2021 academic year. The data collection process took 10 days, and 305 preschool teachers were reached during this period. In this scientific study, it was unanimously decided that there was no ethical harm. The ethics approval from the Institutional Review Board at İstanbul 29 Mayıs University was obtained for the scientific study.

DATA ANALYSIS

First and foremost, the collected data was examined to eliminate any missing, incorrect or outlier values. Kaiser-Meyer Olkin (KMO) coefficient and Bartlett Sphericity test were used to examine the suitability of data for exploratory factor analysis (EFA). Item validity was tested by calculating the item test correlations. EFA was carried out using with SPSS 25.0 package program for construct validity. The determining factor structure was confirmed by conducting a confirmatory factor analysis (CFA) with AMOS 23 program. EFA and DFA were carried out with the data obtained from the same study group *(n=305)*. Cronbach alpha coefficient, correlations between factors, and item-total correlations were calculated to determine reliability.

FINDINGS

This section includes EFA and CFA findings related to the validity and reliability studies of the scale of determining the problem behaviors of children in the preschool period.

FINDINGS REGARDING THE VALIDITY OF THE SCALE

The Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity were examined whether this study, which focuses on the development of the scale is appropriate for the factor analysis. The

value of KMO was calculated as .934, and the Barlett value was calculated as 4376.736 (p = .000). These results show that the data for the Scale of Determining the Problem Behaviors of Children in Preschool Period were suitable for factor analysis and EFA was applied to obtain a meaningful structure. Based on the result of EFA, a structure with 30 items and three factors was obtained. According to Tabachnick and Fidell (2001), the factor load values should be above .32 and, items should not be overlapped at .10 level. In this context, the factor loads of twelve items (i1, i2, i3, i5, i10, i11, i12, i15, i19, i29, i34, and i35) were found to be below .32, therefore these items were removed from the scale. Additionally, fourteen items (i4, i7, i14, i21, i22, i27, i41, i42, i46, i47, i48, i52, i53, and i56) were found to be overlapping. These items were also removed from the scale. According to Tabachnick and Fidel (2001), principal component analysis is one of the most frequently used techniques. The main purpose of this analysis is to extract the maximum variance from the data set with each component. The most common axis rotation technique is varimax in deciding the number of factors along with principal component analysis (Izquierdo, Olea & Abad, 2014). The results of principal component analysis and the varimax rotation technique are given in Table 2.

Table 2. Results from Principal Component Analysis

	Initial Eigenvalues			Rotation Sums of Squared Loadings		
Factor	Total	% of Variance Explained	Cumulative % Variance	Total	% of Variance Explained	Cumulative %
1	11.703	39.011	39.011	6.335	21.12	21.117
2	2.163	7.210	46.221	5.138	17.13	38.244
3	1.774	5.912	52.133	4.167	13.89	52.133

As can be seen in Table 2, there were three factors with an eigenvalue over 1. Initially, the eigenvalues of the factors were respectively 11.70, 2.16, and 1.77. The first factor explains 39.01%, the second factor explains 7.21%, and the third factor explains 5.91% of the total variance. Table 2 also shows the distribution of the variance after the varimax rotation. The developed scale explained 52.13% of the total variance, and the eigenvalues of the factors were respectively 6.33, 5.13, and 4.16. The first factor explains the largest portion of the total variance. After varimax rotation, the first factor explains 21.12%, the second factor explains 17.23%, and the third factor explains 13.89% of the total variance.

Additionally, the items were examined in terms of the acceptance level of the factor load values and overlapping. The results of the rotated factor matrix with loadings are given in Table 3.

Table 3. Rotated Factor Matrix

Items	**Factors**			
	1	**2**	**3**	**R^2**
I6	.544			.362
I8	.751			.628
I16	.560			.453
I18	.622			.451
I23	.725			.591
I26	.680			.563
I33	.742			.599
I43	.512			.364
I44	.811			.683
I45	.651			.612
I50	.558			.532
I55	.646			.572
I9		.528		.375
I13		.721		.553
I17		.641		.525
I20		.679		.556

I25		.707		.650
I28		.664		.617
I32		.771		.706
I38		.607		.576
I39		.597		.479
I54		.445		.358
I24			.635	.519
I30			.598	.469
I31			.507	.473
I36			.701	.540
I37			.537	.438
I40			.510	.402
I49			.572	.447
I51			.725	.548
Eigenvalues	6.335	5.138	4.167	
Explained Variances	21.11%	17.12%	13.88%	
Explained % of Variance	21.11%	38.24%	52.13%	
the Kaiser–Meyer–Olkin Test			.934	
Bartlett's Test	$\chi 2$=4376.736; sd: 435; p=.000			

Table 3 shows that a structure with 30 items and three factors was obtained from the result of EFA. The first factor has 12 items and factor loads ranged from .36 to .68. The second factor has 10 items and factor loads ranged from .35 to .70. The third factor has eight items and factor loads ranged from .40 to .54.

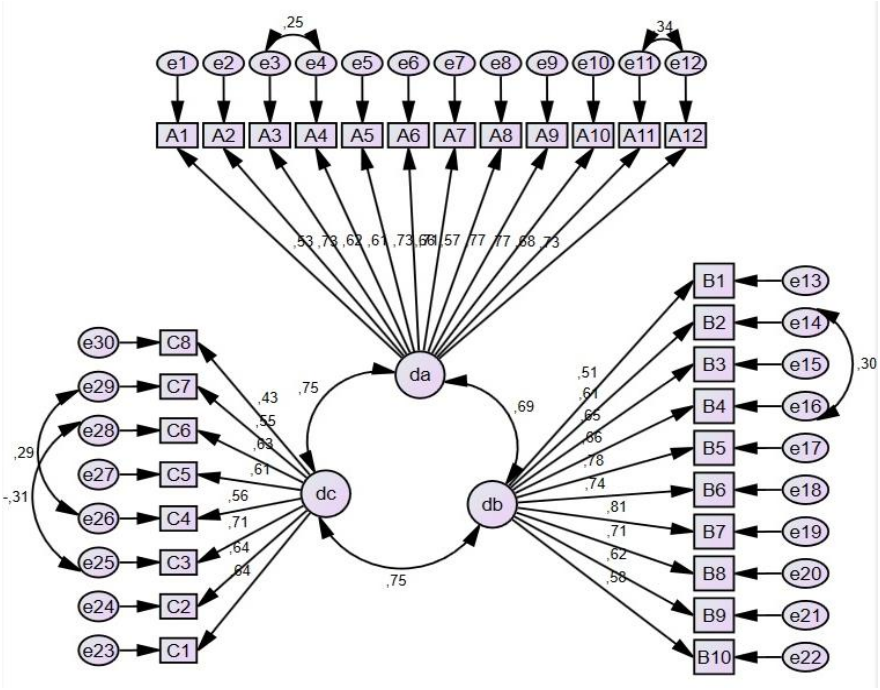
Based on the result of the factor analysis, CFA was conducted to examine the construct validity of the scale. Various goodness of fit indexes was used to evaluate whether the model was compatible with CFA. CMIN/DF (Chi-Square/Df), RMSEA (Root Mean Square Error of Approximation), GFI (Goodness of Fit Index), AGFI (Adjusted Goodness of Fit Index), NFI (Normed Fit Index), CFI (Comparative Fit Index), and IFI (Incremental Fit Index) indexes were analyzed. The fit indexes obtained are given in Table 4.

Table 4. Findings Regarding CFA

Fit Indexes	**Acceptable Fit Criterion**	**Finding of Research**	**Result**	**References**
$\chi 2$/sd	< 3	1.895	Acceptable	Sümer, 2000
RMSEA	≤ 0.08	0.05	Acceptable	Jöreskog & Sörbom, 1993; Tabachnick & Fidell, 2001
GFI	≥ 0.90	0.84	Not Acceptable	Hooper, Caughlan & Mullen, 2008
AGFI	0.80 < AGFI < 1	0.81	Acceptable	Andersen & Gerbing, 1984
NFI	0.90 < NFI < 1.00	0.82	Acceptable	Thompson, 2008
RMR	≤ 0.05	0.02	Acceptable	Brown, 2012
CFI	≤ 0.90	0.90	Acceptable	Sümer, 2000
IFI	0.95 ≤ IFI ≤ 0.97	0.90	Not Acceptable	Schermelleh-Engel, Moosbrugger & Müller, 2003

When the CFA model is examined, the chi-square, chi-square/degree of freedom and fit indexes values of the model with CFA were calculated as $\chi 2$ = 752.405, Df = 397, P = .00, $\chi 2$ / Df = 1.895, RMSEA = .058, GFI = .84, AGFI = .81, NFI = .82, RMR = .02, CFI = .90 and IFI = .90. A value of $\chi 2$/Df below 3 indicates a perfect fit (Sümer, 2000). As a result, the $\chi 2$/Df fit index shows a perfect fit. The value of RMSEA was found to be .05. According to Tabachnick and Fidell (2001), a value below 0.08 means a good fit. Accordingly, the RMSEA fit index corresponds to a good fit. The GFI value was found to be .84. According to Hooper, Caughlan, and Mullen (2008), a GFI value high than .90 indicates a good fit. According to Andersen and Gerbing (1984), a model with an AGFI value between .80 and 1 has an acceptable fit. The value

of AGFI was found to be .81 and indicates an acceptable fit. The NFI value was found to be .82. Thompson (2008) stated that a model with an NFI value between .90 and 1 has an acceptable fit. This shows the NFI does not indicate an acceptable fit. The value of RMR was .02. According to Brown (2006), the RMR value below .05 corresponds to perfect fit. Results show that RMR has a perfect fit. When the CFI fit index is examined, it is seen that the CFI is .90. If the CFI fit index value is over .90, it means that it has a good fit (Sümer, 2000). This shows the CFI has a good fit. Finally, when the IFI fit index is examined, the value of the IFI was .90. Schermelleh-Engel, Moosbrugger & Müller (2003) stated that the acceptable value range for IFI is between .95 and .97. Accordingly, the IFI value is not considered acceptable. The path diagram of DFA is given in Figure 1.



Source: own research

Figure 1. Confirmatory factor analysis correlation diagram (da: academic skills problems, db: peer relationships problems, dc: developmental-behavioral problems)

By looking at these values, it was seen that the items in the scale that were compatible with the results revealed by EFA represented the structure. When the correlation values of the items are examined, it is seen that the correlation between the factor and the factor is between 0.43 and 0.81. According to the results obtained from CFA, correlation values between the three factors were determined as 0.75, 0.75, and 0.69. These values show that the three factors are interrelated. At the end of the study, a three-factor scale consisting of 30 items was obtained. Since the 12 items in the first factor (6, 8, 16, 18, 23, 26, 33, 43, 44, 45, 50, 55) consist of expressions about children's academic skills, this factor was named "academic skills problems". The 10 items in the second factor (9, 13, 17, 20, 25, 28, 32, 38, 39, 54) were named " peer relationships problems" because they consist of relationship expressions towards peers. The eight items (24, 30, 31, 36, 37, 40, 49, 51) in the third factor was named "developmental-behavioral problems" because they consist of relational expressions about children's developmental behavior.

FINDINGS REGARDING ITEM ANALYSIS AND RELIABILITY

Cronbach’s alpha coefficient for the reliability of the scale, item-total correlations, and correlations between factors were calculated. Item-total correlations were examined for each scale item. The results are presented in Table 5.

Table 5. Item-Total Correlations and Cronbach Alpha Reliability Coefficients

Factors	X	SS	Item-Total	Cronbach's Alpha If
1st Factor (α = .91)				
I6	2.14	.59	.527	.912
I8	2.07	.48	.725	.904
I16	1.82	.56	.592	.909
I18	2.03	.50	.588	.909
I23	2.20	.63	.702	.904
I26	2.15	.54	.687	.905
I33	2.33	.60	.681	.905
I43	2.23	.69	.547	.912
I44	2.25	.59	.740	.902
I45	2.12	.60	.741	.902
I50	2.09	.72	.657	.907
I55	2.15	.63	.704	.904
2nd Factor (α = .89)				
I9	1.38	.50	.502	.891
I13	1.72	.60	.616	.884
I17	2.03	.59	.600	.885
I20	1.81	.60	.668	.880
I25	1.92	.59	.716	.877
I28	1.56	.57	.690	.879
I32	1.82	.59	.773	.873
I38	1.76	.59	.676	.880
I39	1.81	.59	.604	.885
I54	1.90	.66	.512	.892
3rd Factor (α = .83)				
I24	1.50	.63	.611	.805
I30	1.84	.74	.582	.809
I31	1.79	.69	.580	.809
I36	1.52	.64	.591	.808
I37	1.68	.63	.533	.815
I40	1.89	.69	.513	.819
I49	1.55	.66	.553	.813
I51	1.28	.51	.513	.819

As a result of the analysis, the Cronbach alpha coefficients are .91 for the first factor, "academic skills problems", .89 for the second factor, "peer relationships problems", and .83 for "developmental behavior problems", which is the third factor. The Cronbach alpha coefficient for the whole scale was determined as .94. According to Karagöz (2016), if the reliability coefficient is in the range of .80-1.00, the instrument is extremely reliable. Based on the findings, the whole scale and the factors are highly reliable. The correlation coefficients between the factors are shown in Table 6.

Table 6. Correlation Coefficients Between Factors

Factors	1st Factor	2nd Factor	3rd Factor	Total
1st Factor	1	.661	.654	.905
2nd Factor	.661	1	.637	.872
3rd Factor	.654	.637	1	.846
Total	.905	.872	.846	1

The correlation coefficient values seen in Table 6 show that there is a medium and high-level relationship between the factors. It can be clearly said that the three factors are not independent of each other.

DISCUSSION AND CONCLUSION

In the study, it was aimed to develop a scale to determine the problem behaviors of preschool children. For this purpose, a 56-item scale form was created and applied to 305 preschool teachers. Based on the data, validity and reliability analysis were obtained. To be suitable for factor analysis, the KMO value of the data obtained from the teachers in the study group should be higher than .60 and the Barlett value should be significant (Tabachnick & Fidell, 2001). In this context, it was concluded that the data obtained were suitable for EFA. As a result of the analysis, it was seen that the 30-item scale was gathered under three factors and the factors explained 21.11%, 17.12%, and 13.88% of the total variance, respectively, and 52.13% of the total variance. Reliability coefficients were calculated as alpha 0.91 for the first factor, 0.89 for the second factor, and 0.83 for the third factor. The alpha value for the whole scale was found to be 0.94. When the results obtained from this study were evaluated as a whole, the evidence regarding the validity and reliability of the "The Scale of Determining the Problem Behaviors of Children in Preschool Period" was found to be quite strong.

In the literature, there are few scales developed to measure problem behaviors of preschool children. When the factor structure of the scale developed in this study was compared with the scales in the literature, it has seen that there were some similarities and differences. For example, in Goodman (1997)'s study, sub-dimensions were "peer relationship problems", "emotional symptoms", "conduct problems", "hyperactivity/inattention", and "prosocial behaviour". Similarly, Kaner and Uçak-Çiçekçi (2000)'s study, sub-dimensions were "depression-attention deficit", "socialized aggression behavior disorder", and "hyperactivity-impulsivity". Sucuoğlu (2003) had named the dimensions as "hyperactivity", "lethargy", "stereotypic behaviour", "self-injury", and" other behaviors". Additionally, in Özbey and Alisinanoğlu (2009)'s study, factors' names were "externalizing problems", "antisocial", "internalizing problems", and "self-centered". In this study, factors, considering the relevant literature, were named "academic skills problems", "peer relationship problems", and "developmental-behavioral problems". Especially for the first factor, the academic problems, it differs from other scales in terms of naming factors obtained as a result of the analysis, but it shows that second and third factor are coherent with the relevant literature.

It has been observed that studies conducted in our country on problem behaviors of preschool children are generally adaptation studies. This scale, developed for this purpose, is expected to contribute to filling the gap in the literature. After this study, the scale will be named "The Scale of Determining the Problem Behaviors of Children in Preschool Period" and will be applied. As a result of the validity and reliability study conducted by the researchers, it can be used in determining the problem behaviors of preschool children.

* We undertake that all the rules in the Higher Education Institutions Scientific Research and Publication Ethics Directive are complied with and that none of the "Actions Against Scientific Research and Publication Ethics" in the second part of the directive are carried out.

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