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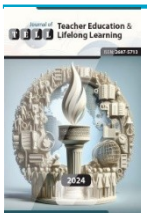

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Preschool Peer Aggression Scale (Teacher Form): Validity Reliability Study

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ABSTRACT

This study aimed to develop and establish the validity and reliability of the Preschool Peer Aggression Scale (Teacher Form) (PPAS-TF). The studycarried out with two distinct sample groups. The scale's factor structure was established through Principal Components Analysis on the initial group, which comprised 1106 children (F=508; M=597). The second sample, which included 551 children (F:255; M:296) was utilized to conduct Confirmatory Factor Analysis to validate the factor structure. The scale's validity was also assessed through content and external criterion validity. For content validity, a literature review and expert consultation were employed. Convenience validity was used for criterion validity. For reliability, internal consistency coefficients, item-total correlation coefficients, and correlations between the factors were examined. As a result, the 28-item PPAS-TF for 4-6-year-old children was categorized into three sub-dimensions: social aggression, physical aggression, and verbal aggression. Teachers can use this form to assess aggression levels, with each sub-dimension's score indicating the extent of that specific aggression type. Higher scores in the sub-dimensions signify a greater propensity for that type of aggression. Additionally, an overall assessment can be made using the total score. The distinctiveness of the PPAS-TF arises from its development with a Turkish sample and its incorporation of three sub-dimensions.

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INTRODUCTION

The increase in aggression cases among preschool and school-aged children has brought about a crucial concern for educators, parents, and mental health experts. Although the literature underlines that aggressive behaviors are more notable during adolescence, it also states that such behaviors can be observed at a critical level during early childhood (Coyne, Archer & Eslea, 2006; Heizomi, Jafarabadi, Kouzekanani, Matlabi, Bayrami, Chattu & Allahverdipour, 2021; Sharma & Marimuthu, 2014; Su, 2018). Aggression is defined as a specific behavior displayed or targeted to deliberately harm another individual. The aggressor acts by being aware that the aggressive behavior will harm the target individual (Hanratty, Macdonald & Livingstone, 2015; Su, 2018; Şengönül, 2017).

Aggressive behaviors do not always occur physically. Psychologists and field experts underline various types of aggression (Hanratty et al., 2015). One of these is verbal aggression. Verbal aggression refers to behaviors that an individual displays on others through communication such as humiliating, degrading, offending, shouting, threatening, and teasing (Güler & Özgörüş, 2021; Roberto, Meyer, Boster & Roberto, 2003). When compared with physical and relational aggression, it is observed that verbal aggression is displayed at a higher level during free play times in preschool education classrooms (Erbay & Durmuşoğlu-Saltalı, 2022; Ostrov & Keating, 2004). Physical aggression is another type of aggression that commonly occurs during early childhood (Erbay & Durmuşoğlu-Saltalı, 2022). Physical aggression, which refers to using the body or weapons to fight or show hostility, is one of the most common forms of aggression. Physical aggression, which causes physical damage or physically threatens other individuals, is generally the effort to protect self-image and consists of violent crimes such as physical quarrels and theft, and other highly risky behaviors (Denson, Pedersen & Miller, 2006; Lakhdir, Rozi, Peerwani & Nathwan, 2020; Sharma & Marimuthu, 2014; Su, 2018). Heilborn & Prinstein (2008) underline the concept of social aggression which is defined as another type of aggression. Social aggression refers to behaviors that deliberately harm interpersonal relationships or social status through non-conflict and usually confidential methods and that typically require the participation of social members. These behaviors can be exemplified as social exclusion, negative facial expressions, vicious rumors, and friendship manipulation (Heilbron & Prinstein, 2008; Paquette & Underwood, 1999).

Various factors that cause aggressive behaviors in children have been discussed. These are factors such as genetic factors, media, gender, culture, and sedentary lifestyle (Kumari & Kumar, 2018; Su, 2018; Wilson, 2008). It is also believed that harsh parenting, authoritarian parenting, physical punishment, and permissive parenting attitudes increase the likelihood of aggressive behaviors among children (Batool, 2013; Chen & Raine, 2018; De la Torre-Cruz, García-Linares & Casanova-Arias, 2014; Lakhdir et al., 2020; Mendez, Durtschi, Neppl & Stith, 2016; Ojedokun, Ogungbamila & Kehinde, 2013; Savage, 2014). There are also study results indicating that experiencing peer refusal and having aggressive and bullying peers around calls for and reinforces aggressive behaviors among children (Ellis & Zarbatany, 2007; Ladd, 2006).

Aggression tends to reach its peak between ages 2-4 during early childhood (Piquero, Carriaga, Diamond, Kazemian & Farrington, 2012; Tremblay, 2010). Although most children learn socially acceptable ways of coping with their environment as they grow, some can fail in decreasing their aggressive behaviors and can follow a consistently aggressive and anti-social behavior pattern during adolescence and later (Hanratty et al., 2015). Problems related to anger and aggression management can have negative effects on children such as being excluded at school, school dropout, social problems, externalization behavior problems, internalization behavior problems, weak emotional state, and well-being, and adapting to the criminal justice system (Babore, Carlucci, Cataldi, Phares & Trumello, 2017; Estévez, Jiménez & Moreno, 2018; Piquero et al., 2012; Salimi, Karimi-Shahanjarini, Rezapur-Shahkolai, Hamzeh, Roshanaei & Babamiri, 2019). Longitudinal studies have shown that children with aggression problems in early childhood have a higher risk of violence, alcohol, and drug use, getting involved in crime, depression, and committing suicide than their peers during adolescence (Erbay & Durmuşoğlu-

Saltalı, 2022; Jenkins, Demaray & Tennant, 2017; Kokko & Pulkkinen, 2000).

Thus, the importance of appropriate intervention methods concerning aggression has come to the agenda (Michelson, Davenport, Dretzke, Barlow & Day, 2013) Serious and chronic anti-social behaviors can emerge in young children with anger and aggression problems in cases of lack of appropriate intervention. When the prevalence and long-term effectiveness of anger and aggression problems during childhood are considered, it is crucial to identify and conduct effective interventions and to end ineffective interventions (Hanratty et al., 2015). Nonetheless, the initial and crucial step in this process is the accurate and clear identification of aggressive behaviors in children, along with a comprehensive understanding of the types and frequencies of these behaviors. Hence, it is imperative to have a variety of additional measurement instruments available for assessing child aggression.

This study was planned to develop a measurement tool to evaluate children's aggressive behaviors during early childhood through teacher observations. Teacher reports concerning aggressive behaviors are the most frequently used method in evaluating aggression among young children (Perry, Ostrov, Murray-Close, Blakely-McClure, Kiefer, DeJesus-Rodriguez & Wesolowski, 2021). Teachers witness daily peer interactions more than parents and this enables them to be more informed than parents concerning peer-oriented aggression. In addition, teachers generally have experience in peer interactions among children; thus, have an idea about the "typical" behaviors of preschool period children (Perry et al., 2021). On the other hand, teachers can partly develop judgments about a child in the classroom based on how other children react to that child. Thus, it is reasonable to expect teachers to accurately perceive how children interact with each other within the classroom (Huesmann, Eron, Guerra & Crawshaw, 1994). As a result, teachers have become a reliable and valid resource that consistently evaluates the aggressive behaviors of children (Estrem, 2005; Juliano, Stetson Werner & Wright Cassidy, 2006; Perry et al., 2021).

Considering the available literature, it becomes clear that in Turkey, many assessment tools are designed for specific phases of early childhood and primarily focus on evaluating aggressive behaviors in children during their primary school years. Among the tools that are based on parents' and teachers' evaluations is the "Aggression Scale for Children-Parent Form" (Ercan, Ercan, Akyol-Ardıç & Uçar, 2016), which measures behaviors of 7-14 years old children, and the "Aggression Scale for Children-Teacher Form" (Ulu, 2018), which evaluates 7-15 years old children. In addition, the "Preschool Social Behaviour Scale-Teacher Form" (Şen & Arı, 2011), which consists of a total of six sub-dimensions and evaluates preschool period children's aggressive behaviors through the two physical and relational aggression sub-dimensions, and the "Preschool Social Behaviour Scale-Peer Form" (Şen & Teke, 2019), which has a total of 3 sub-dimensions including the physical and relational aggression sub-dimensions, are among measurement tools in the literature used to determine aggressive children. The "Ladd-Profilet Child Behaviour Scale", which consists of an aggressive behavior sub-dimension and was adapted to Turkish by Gülay (2008); the "Selçuk Peer Relationships Evaluation Scale" (Kaynak, Kan & Kurtulmuş, 2016), which evaluates peer relationships and aggression levels of 36-72 months old children through a sub-dimension; and the "48-72 Months Old Children's Aggression Tendency Scale" (Kaynak, Kan & Kurtulmuş, 2016) are used in studies. As evident, it is necessary to develop scales aimed at uncovering the levels and types of aggression among preschool children in Turkey. For this reason, there is a need for measurement tools that are developed according to the Turkish culture, whose validity and reliability studies have been completed, and which only evaluate aggression through various dimensions. Measurement tools that are developed to identify aggressive behaviors in young children emerge as a crucial need. Thus, this study aims to develop a measurement tool to evaluate the aggressive behaviors of 4-6-year-old children.

The research questions of the study are as follows:

1. Is the Preschool Peer Aggression Scale (Teacher Form) (PPAS-TF) developed for preschool children a valid measurement tool?

2. Is the Preschool Peer Aggression Scale (Teacher Form) (PPAS-TF) developed for preschool children a reliable measurement tool?

METHOD

Research Design

This study focused on developing a scale, employing a survey model that avoids any disruption to the individual, case, or situation (Fraenkel, Wallen & Hyun, 2012), which gathered research participants' unaltered opinions about the examined phenomenon (Büyüköztürk, Çakmak, Akgün, Karadeniz & Demirel, 2017). The study aimed to develop a peer aggression measurement tool for preschool children. The purpose of scale development studies is to best reveal the structure of the characteristic being measured (Erkuş, 2019).

Research Sample

This study comprises two distinct sample groups. The factor structure of the scale was initially established through Principal Components Analysis (PCA) in the first sample group. Subsequently, the second sample group was incorporated into the Confirmatory Factor Analysis (CFA) to validate the factor structure derived from the PCA.

The convenience sampling method was preferred when determining the first sample of the research. Convenience sampling is a non-random sampling method where the sample selection from the population is determined by the researcher's judgment. In convenience sampling, data is collected from the population in the easiest, quickest, and most economical way possible (Aaker et al., 2007: 394). However, one child from each of the 12 regions, which are among the first level of the Turkish Statistical Institute (TÜİK) regional classification, was included to achieve an inclusive sample. One province from the 12 regions was selected randomly and data were collected by contacting teachers working in that province. The sample size was calculated to identify the minimum number of children that can be in the sample. According to 2021-2022 TÜIK data, there are a total of 1,226,981 children aged 48-72 months old attending kindergarten and nursery schools. According to this calculation, there should be 666 or more measures conducted to reach 99% reliability and the real value is 5%± close to the measured value. Since there can be incomplete data, it was planned to collect data from 1000 children. Consequently, data from a total of 1106 (F=508; M=597) children were collected. The entire sample consists of typically developing children. Table 1 displays demographics for the first sample.

Table 1. *Demographics for the first sample (n=1106)*

Age	f	%
4 years old	241	21.8
5 years old	583	52.7
6 years old	282	25.5
Total	1106	100.0
Province		
İstanbul region- İstanbul province	201	18.7
West Marmara region-Kırklareli province	44	4.0
Ege region- Muğla province	106	9.6
East Marmara- Bursa provinc	72	6.5
West Anatolia region- Ankara province	145	13.1
Akdeniz region- Isparta province	115	10.4
Anatolia region- Niğde province	50	4.5
West Karadeniz region- Zonguldak province	82	7.4
East Karadeniz region- Trabzon province	89	8.0
North East Anatolia- Kars province	56	5.1
Middle East Anatolia region-Muş province	72	6.5

South East Anatolia region, Batman province	74	6.7
Total	1106	100.0
Mother education	f	%
Iliterate	13	1.2
Literate	45	4.1
Primary school degree	145	13.1
Middle school degree	95	8.6
High school degree	294	26.6
University degree	514	46.5
Total	1106	100.0
Father education	f	%
Iliterate	3	0.3
Literate	21	1.9
Primary school degree	115	10.4
Middle school degree	116	10.5
High school degree	319	28.8
University degree	532	48.1
Total	1106	100.0

Whether the factor structure resulting from the PCA, conducted on the first sample, can be confirmed was tested with children in the second sample which consisted of children attending preschools in Istanbul region, Istanbul province. A total of 551 children (F:255; M:296) participated in the research. The entire sample consists of typically developing children. Table 2 displays the demographics for the second sample.

Table 2. *Demographic information for the second sample (n=551)*

Age	f	%
4 years old	162	29.4
5 years old	247	44.8
6 years old	162	29.4
Total	551	100.0
Mother education	f	%
Iliterate	5	0.9
Literate	18	3.3
Primary school degree	69	12.5
Middle school degree	50	9.1
High school degree	149	27.0
University degree	260	47.2
Total	551	100.0
Father education	f	%
Iliterate	1	0.2
Literate	8	1.5
Primary school degree	56	10.2
Middle school degree	57	10.3
High school degree	167	30.3
University degree	262	47.5
Total	551	100.0

Research Instruments and Processes

The Preschool Peer Aggression Scale (Teacher Form) (PPAS-TF)

The Preschool Peer Aggression Scale (Teacher Form) was developed in this study. A literature review was carried out before developing the form. In this regard, national and international articles, books, master's theses, and doctoral dissertations on preschool aggression from the years 2000 to 2020 have been reviewed. At the end of the literature review, a form was developed containing 39 items and was sent for expert opinion. In the process of developing measurement instruments, experts are consulted to assess their content validity. These experts evaluate the items of the measurement tool within the framework of content validity (Büyüköztürk, 2005). Opinions of two assessment evaluations and two preschool education academicians with doctoral degrees; one preschool education teacher with a doctoral degree in the field of preschool education were resorted to and the form was updated to 33 items. As a result of the validity and reliability studies, the 5-point Likert-type form gained its final form with 28 items. The Preschool Peer Aggression Scale (Teacher Form) consists of 3 sub-dimensions which are social aggression (10 items), physical aggression (9 items), and verbal aggression (9 items). The Social Aggression Sub-Scale consists of aggressive behaviors such as violating peers' rights, hurting peers' feelings, excluding peers, rejecting peers, and exercising pressure on peers. The Verbal Aggression Sub-Scale consists of aggressive behaviors that aim at harming peers (nicknaming, offending, teasing, provoking, etc.). The Physical Aggression Sub-Scale refers to physically aggressive behaviors (pinching, harming belongings, kicking, etc.). There are no reversed items in the scale. The total score obtained from each sub-dimension indicates the type of aggression. It is confirmed that the extent of displaying the aggression type increases as the score obtained from the sub-dimensions increases.

Ladd and Profilet Child Behavior Scale's Aggression Sub-Scale

This scale was used to test the criterion validity of the measurement tool developed during the study. The scale is one of the sub-scales of the Child Behaviour Scale developed by Ladd and Profilet (1996). It is used to measure aggressive behaviors of preschool-aged children based on teacher observations. The Aggression Sub-Scale consists of 7 items. The teacher evaluates the child with each item through a 3-point Likert tool (0=Inappropriate; 1=Sometimes appropriate; 2=Completely Appropriate). The scale was adapted to Turkish by Gülay in 2008 (Gülay, 2008). The internal consistency coefficient of the sub-scale was observed to the .87 in this study.

Data Analysis

Various methods were conducted to test the validity and reliability of the scale. Content validity, construct validity, and external criterion validity were examined for scale validity. Literature review and expert opinions were resorted for content validity; PCA and CFA were conducted for construct validity; convenience validity analysis was conducted for criterion validity. The Cronbach's Alpha internal consistency coefficients, item-total correlation coefficients, and correlation coefficients between the factors were examined for scale reliability.

The kurtosis and skewness values were examined before the data analysis to figure out whether the data set accounts for the normality assumption. According to Kline (2015), items account for single variable normality assumption in cases when the skewness values are between -3 and +3 and when kurtosis values are between -8 and +8. Concerning the kurtosis and skewness values for the first sample (n=1106), it was observed that the skewness and kurtosis values of item 4 (bites peers), item 10 (scratches peers), item 11 (spits at peers) and item 21 (swears at peers) are not between the values stated by Kline (2015). When frequency distribution of these items is considered, behaviors underlined in these items are carried out rarely, thus it was decided that it is convenient to take the items out of the analysis. The PCA was to be carried out on the remaining 29 items. Concerning the kurtosis and skewness values for the remaining 29 items in the second sample (n=551), it was observed that the

skewness and kurtosis values for every item were between the range stated by Kline (2015).

The Kaiser-Meyer-Olkin Test for Sampling Adequacy was conducted to test the convenience of the sample size; Bartlett Test results were examined to see whether the data set is convenient or not for a factor analysis. Table 3 shows the results of The Kaiser-Meyer-Olkin Test for Sampling Adequacy and Bartlett's Test of Sphericity for both samples. Based on these results, the data set and sample were observed to be convenient for a factor analysis.

Table 3. *The results of The Kaiser-Meyer-Olkin Test for Sampling Adequacy and Bartlett's Test of Sphericity for both samples*

		First sample (n=1106)	Second sample (n=551)
The Kaiser-Meyer-Olkin Test for Sampling Adequacy		.979	.973
Bartlett's Test of Sphericity	Approx. Chi-Square	31665.02	17723.30
	df	406	406
	Sig.	.00	.00

Ethic

Ethics approval of the study was obtained from the Science Research and Publication Ethic Committee of Bahçeşehir University, dated 22.06.2020 and numbered 2020/04.

RESULTS

Construct Validity

Principal components analysis

Data from the first sample (n=1106) were tested through the PCA to identify the factors of the scale that was developed; the Kaiser Normalization, which is an orthogonal rotation method, and the Promax Rotation methods were used to put forward the factors. According to the analysis results, there are 3 factors with an eigenvalue above 1 which account for 71.32% of the total variance. Figure 1 displays the Scree plot.

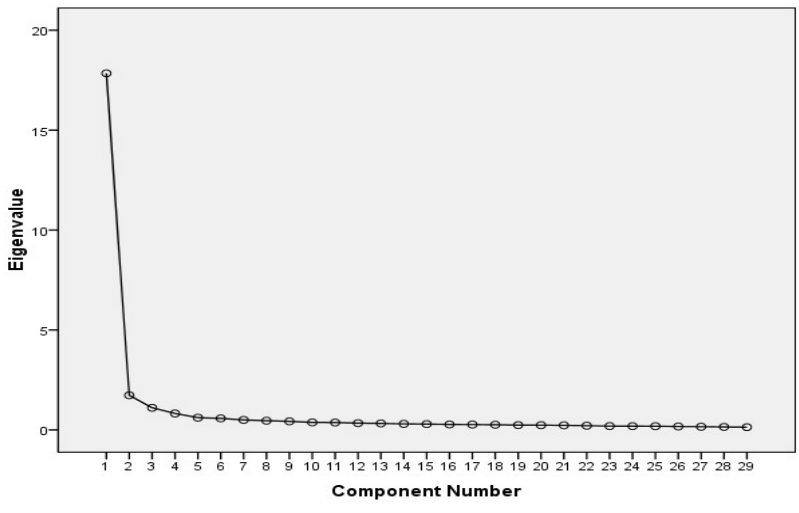

Figure 1. *Scree plot*

The eigenvalue of the first factor is 17.84 and accounts for 61.53% variance; the eigenvalue of the second factor is 1.73 and accounts for 5.98% variance and the eigenvalue of the third factor is 1.11 and accounts for 3.81% variance. However, the rotated components analysis results indicate that Item 13 (Sticks tongue at peers) doesn't have a factor load above .40 in the three-factor structure. For this

reason, the analysis was repeated by excluding this item from the analysis. As a result of the repeated analysis, a 3-factor structure was developed with an eigenvalue above 1 which accounts for 71.93% of the total variance. It was observed that the eigenvalue of the first factor is 17.30 and accounts for 61.79% variance; the eigenvalue of the second factor is 1.73 and accounts for 6.19% variance and the eigenvalue of the third factor is 1.11 and accounts for 3.95% variance. All items were loaded above .40 for the related factor. When the items in the factors are considered, it is evident that the first factor can be named Physical Aggression, the second factor can be named Social Aggression, the third factor can be named Verbal Aggression, and that this 3-factor structure is theoretically significant. The items and their names were shared with field experts (n=3), the factors were finally named after obtaining the positive opinions of the experts. Table 4. displays the results of the Rotated PCA.

Table 4. *Results of the rotated principal components analysis*

	Physical Aggression	Social Aggression	Verbal Aggression	Explained variation	Cronbach α
Item 3	**1.00**			61.79	.94
Item 1	**.95**				
Item 6	**.83**				
Item 2	**.82**				
Item 8	**.76**				
Item 12	**.76**				
Item 5	**.66**				
Item 9	**.65**				
Item 24	**.55**				
Item 23		**.96**		6.19	.95
Item 25		**.96**			
Item 17		**.83**			
Item 14		**.75**			
Item 15		**.73**			
Item 31		**.72**			
Item 28		**.72**			
Item 33		**.52**			
Item 29		**.51**			
Item 7		**.44**			
Item 26			**.94**	3.95	.95
Item 18			**.92**		
Item 22			**.84**		
Item 32			**.78**		
Item 16			**.77**		
Item 19			**.70**		
Item 20			**.70**		
Item 27			**.65**		
Item 30			**.56**		

Note: The highest factor load of the items is given in bold.

Confirmatory factor analysis

The 3-factor structure of the measurement tool, which was developed after the PCA, was tested through the CFA. Data from the second sample (n=551) were used for the CFA. To evaluate the fitness of the 3-factor structure the chi-square (χ 2) goodness of fit value, RMSEA, CFI, and SRMR fit indexes (Kline, 2015) were taken as a basis. The χ 2/sd rate should be below 5 (Sümer, 2000), the CFI value should be above .90, the SRMR value should be below .10 and the RMSEA value should be below .08 to reach an acceptable fitness level (Hu & Bentler, 1999). The results underline that the 28-item and 3-factor structure of the scale has been confirmed. Table 5. shows the results in a tabular form.

Table 5. *Goodness-of-fit indicators for the 3-factor model*

Model	χ 2/sd	CFI	SRMR	RMSEA
3-Factor	4.82	.92	.04	.08

Criterion validity

The Aggression Sub-Scale of the Ladd and Profilet Child Behavior Scale was carried out on 130 children from the second sample and correlations between the scores were examined to test the criterion validity of the scale. Table 6 displays the Ladd and Profilet Child Behaviour Scale's Aggression Sub-Scale scores and correlation coefficients of the scale regarding both the sub-dimensions and the total score.

Table 6. *The Preschool Peer Aggression Scale (Teacher Form), Ladd and Profilet Child Behaviour Scale's Aggression Sub-Scale score, and correlation coefficients between the factors*

	1	2	3	4	5
1. Physical Aggression	1				
2. Social Aggression	.77*	1			
3. Verbal Aggression	.79*	.86*	1		
4. The Preschool Peer Aggression Scale (Teacher Form) Total	.91*	.95*	.94*	1	
5. Aggression Sub-Scale of the Ladd and Profilet Child Behaviour Scale	.81*	.76*	.78*	.83*	1

*p < .01

It is evident in Table 4 that there is a highly significant positive correlation between the sub-dimensions. These results indicate consistency within the scale. The Aggression Sub-Scale of the Ladd and Profilet Child Behaviour Scale, used to examine criterion validity, has a high level of positive and significant relationship with both the sub-dimensions and the total scale score; this indicates that the children in the same sample get similar scores from different scales measuring similar structures and thus, the scale is at an acceptable level for criterion validity.

Reliability

Internal consistency

The internal consistency coefficients were examined in both samples for the reliability of the measurement tool. Values of the first sample (n=1106) were identified as .95 for Physical Aggression, .95 for Social Aggression, and .94 for Verbal Aggression. The internal consistency coefficient of the total scale was measured as .98. Since all values are above .80, both the sub-dimensions and also the total scale are highly reliable (Akgül & Çevik, 2003). Values of the second sample (n=551) were identified as .95 for Physical Aggression, .95 for Social Aggression, and .95 for Verbal Aggression. The internal consistency coefficient of the total scale was measured as .98. Since all values are above .80, both the sub-dimensions and also the total scale are highly reliable (Akgül & Çevik, 2003). Thus, it can be concluded that the internal consistency of the scale is high for both samples.

Item-total score correlation

The item-factor total score and item-total score correlations were examined to observe whether the scale can be measured reliably. Table 7 presents the correlation coefficients. It was observed that all the items have a positive correlation with the factor total score and total scale score of the factor they belong to and that the lowest correlation value is .65. These results indicate that the items exemplify similar features.

Table 7. *Item-factor total score and item-total score correlations*

Item-Factor Total Score Correlation	Item-Total Score Correlation	
Physical Aggression	Physical Aggression	
.89	.76	Item 3
.89	.77	Item 1

	.87	.79	Item 6
	.83	.73	Item 2
	.88	.81	Item 8
	.86	.78	Item 12
	.72	.65	Item 5
	.74	.67	Item 9
	.86	.86	Item 24
Social Aggression			Social Aggression
	.81	.72	Item 23
	.78	.71	Item 25
	.87	.82	Item 17
	.84	.80	Item 14
	.79	.73	Item 15
	.86	.81	Item 31
	.86	.81	Item 28
	.82	.81	Item 33
	.84	.83	Item 29
	.81	.82	Item 7
Verbal Aggression			Verbal Aggression
	.78	.70	Item 26
	.85	.78	Item 18
	.82	.76	Item 22
	.86	.81	Item 32
	.87	.82	Item 16
	.88	.84	Item 19

Correlations between the factors

Correlation values between the sub-dimensions are presented in Table 7 to show the relationships between sub-dimensions. According to Tabacknick and Fidel (2007), to prove that a scale is reliable, correlation values between the sub-dimensions should be significant and shouldn't be too high or too low. High values show that the dimensions are overlapping, and low values show that the dimensions are divergent. According to the Table, the correlation coefficients of the sub-dimensions are .77, .79, and .86. The scale was approved to be reliable based on the fact that these coefficients are at acceptable levels.

DISCUSSION, CONCLUSION, RECOMMENDATIONS

Based on the findings of this study, it was observed that The Preschool Peer Aggression Scale (Teacher Form) is a valid and reliable measurement tool for 4-6-year-old children with typical development. The Preschool Peer Aggression Scale (Teacher Form), which consists of 28 items and three sub-dimensions, is a 5-point Likert (Never, Rarely, Sometimes, Mostly, Always) type scale. The Preschool Peer Aggression Scale (Teacher Form) consists of 3 sub-dimensions which are social aggression (10 items), physical aggression (9 items), and verbal aggression (9 items). In the form that was filled in through teacher observations, the total score for each sub-dimension refers to the related aggression type. It is confirmed that the extent of displaying the aggression type increases as the score obtained from the sub-dimensions increases. The total score of the scale can also be evaluated. There are no reversed items in the scale. The measurement instrument possesses distinct value due to its origin from a Turkish sample, its original development rather than adaptation from an international scale, and its inclusion of three sub-dimensions.

Reviewing research in Turkey reveals the existence of diverse instruments designed to assess children's aggressive behavior, with a primary focus on elementary school-aged children but also extending to the preschool years. There are measurement tools available that rely on assessments from parents and teachers, such as the "Children's Aggression Scale Parent Form " (Ercan et al., 2016), which evaluates behaviors of children aged 7-14, and the " Children's Aggression Scale Teacher Form " (Ulu,

2018), which assesses children aged 7-15. Furthermore, there are measurement tools used to identify aggressive behaviors in preschool children, which assess these behaviors in terms of two sub-dimensions: physical aggression and relational aggression. One such tool is the "Preschool Social Behavior Scale - Teacher Form" (Şen and Arı, 2011), which consists of six sub-dimensions in total. Another tool is the "Preschool Social Behavior Scale - Peer Form" (Şen and Teke, 2019), which assesses physical and relational aggression as well, with a total of three sub-dimensions, and is also utilized to identify aggressive children. The "Ladd-Profile Child Behavior Scale," adapted into Turkish by Gülay (2008) and including a dimension for aggressive behavior, along with the "Selçuk Peer Relationship Assessment Scale" by Özmen (2013) for assessing peer relationships and aggression levels in children aged 36-72 months, and the "Aggression Orientation Scale for Children Aged 48-72 Months" (Kaynak, Kan, and Kurtulmuş, 2016), are frequently utilized in studies. The Peer Aggression Scale (Teacher Form) developed in this study possesses distinctive value as it covers the age range of 4-6 years and consists of three sub-dimensions (social aggression, physical aggression, and verbal aggression), enabling assessment from both sub-dimensions and overall perspectives.

Identifying aggressive behaviors of children through valid and reliable measurement tools will contribute to developing educational programs that are based on these determinations and offer guidance in resorting to school psychological counselors or psychologists when necessary. For this reason, the Preschool Peer Aggression Scale (Teacher Form) can be considered to contribute to researchers, teachers, mental health experts, and early childhood educators.

Limitations

The validity and reliability are limited to 4-6-year-olds with typical development and who are attending preschools. In addition, the measurement tool evaluated the aggressive behaviors of children according to teacher opinions. Alternative evaluations such as peer opinions, parent opinions, and observation were not included in this study. Various suggestions can be set based on these limitations. Measurement tools can be developed that examine aggression regarding various data collection sources such as peer opinions and observation. The Preschool Peer Aggression Scale (Teacher Form) can be carried out on different age groups. Designing measurement tools that evaluate aggressive behaviors of preschool children through different peer, teacher, parent, observation, etc. perspectives can enable us to reach more accurate and reliable results when evaluating such behaviors. Furthermore, structural equation modeling was not utilized in the analysis of the measurement instrument in this study. Therefore, it is recommended that future studies consider conducting analyses using structural equation modeling.

It is believed that the PPAS-TF can be a significant resource for collecting information about the social, physical, and verbal aggression levels of young children. Future research efforts can employ this scale to investigate aggression in young children in connection with a range of different variables.

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