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A STUDY ON THE ADAPTATION OF THE TEACHERS' RATINGS OF CHILD SECURE BASE BEHAVIOUR AND EMOTION REGULATION SCALE INTO TURKISH CULTURE

Çocuğun Güven Temelli Davranışları ve Duygu Düzenlemesi Derecelendirme Ölçeği Öğretmen Formunun Türk Kültürüne Uyarlama Çalışması

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Abstract
The goal of this study is to adapt the Teachers' Ratings of Child Secure Base Behaviour and Emotion Regulation Scale into Turkish culture. The research group of the study included 295 children aged from 48 to 72 months. A total of 59 teachers participated in the adaptation study for the children. Data obtained were firstly used for confirmatory factor analysis in the scale validity test. According to the CFA results, a 28-item and two-factor structure of the scale was accepted with no need for any amendments. Strong significance was found between the reference scales and the scales on which the criterion-related validity test focused. The Cronbach's alpha value of the scale was found to be .970 in the reliability test. A strong correlation was found between the two applications in the test re-test stage. The study findings reveal that the scale is a valid and reliable assessment tool for Turkish culture.
Keywords: *Emotion Regulation, Secure Base Relation, Validity, Reliability*
Öz
Bu çalışmada Çocuğun Güven Temelli Davranışları ve Duygu Düzenlemesi Derecelendirme Ölçeği Öğretmen Formu'nun Türk kültürüne uyarlama çalışmasının gerçekleştirilmesi amaçlanmaktadır. Araştırmanın çalışma grubunu 48-72 aylık 295 çocuk oluşturmaktadır. 59 öğretmen çocuklar için ölçek uyarlama çalışmasına katılmıştır. Elde edilen veriler ile geçerlilik çalışmalarında öncelikle yapı geçerliliği çalışması kapsamında doğrulayıcı faktör analizi (DFA) gerçekleştirilmiştir. DFA sonuçlarına göre ölçeğin 28 maddeli ve iki faktörlü yapısı herhangi bir değişikliğe gerek olmadan kabul edilmiştir. Ölçüt bağıntılı geçerlilik çalışmasında odaklanılan ölçekler ile referans ölçekler arasında yüksek düzeyde kolerasyon bulunduğu belirlenmiştir. Güvenilirlik çalışmasında ise ölçeğin Cronbach alpa değeri ,970 olarak tespit edilmiştir. Test tekrar test güvenilirliğinde ise iki uygulama arasında yüksek düzeyde kolerasyon saptanmıştır. Elde edilen bulgular ile ölçeğin Türk kültüründe geçerli ve güvenilir bir değerlendirme aracı olduğu sonucuna ulaşılmıştır.
Anahtar Kelimeler: *Duygu Düzenleme, Güven Temelli İlişki, Geçerlilik, Güvenilirlik*

1. INTRODUCTION

Individuals experience emotions as a result of significant events or situations, which affect their behaviour (Gross, Richards & John, 2006). According to Gross (2002), what matters is how people regulate their emotions rather than what those emotions are and when they can occur because they cause serious problems when they do not occur in a suitable way, intensity and duration (Denollet, Nyklicek & Vingerhoets, 2008; Werner & Gross, 2010). Emotion regulation is a concept that reflects how people can change the intensity, duration and expression of their activated emotions (Thompson, 1994; Cole, Martin & Dennis, 2004; Koole, 2010).

Emotion regulation, the basis of emotional development, is an interesting topic in child development. Although emotion regulation skills continue to develop throughout people's lives, the early years are the most critical period (Berk, 2013). The development of emotional regulation skills begins with the birth of the child. Support given by parents' speech to children's emotions that occur with pleasure or distress enhances the development of emotion forms (Izard, 1991). On the other hand, the preschool period involves many new dimensions for the development of emotion regulation skills. In particular, peer relations and school rules in preschool education institutions help children use emotion regulation skills in an independent and effective way (Sala, Pons & Molina, 2014).

It is known that children who are able to regulate their emotions properly possess many developmental advantages. These children gain the social, emotional and cognitive gains of the period more easily (Trentacosta, Izard, Mostow & Fine, 2006). Children who gain more autonomy through motor development use their emotion regulation skills that they have acquired and continue to develop in order to adapt to new social environments and peer relations (Gross, 2013). It is emphasized that children who have strong emotion regulation skills are able to explore new settings at more ease and detail in the preschool period (Waters, Wippman & Sroufe, 1979), have higher levels of school readiness and school adaptation (Blair & Diamond, 2008; Tarullo, Obradovic & Gunnar, 2009; Ramani, Brownell & Campbell, 2010), are better at intra-class interaction (Drake, Belsky & Fearon, 2014), and can perform difficult classroom tasks more effectively (Denham, Bassett, Zinsser & Wyatt, 2014). Another aspect related to emotion regulation skills is the secure base relations with teachers. Secure base relations formed with teachers are the those that are based on love, rapport, proximity and particularly attachment (Pianta & Stuhlman, 2004; Driscoll & Pianta, 2011).

Emotion regulation skills developed at the beginning of infancy are closely related to building and developing attachment relations, which have significant impacts on the development and interpersonal relations of children throughout their lives. Bowlby, recognised as the founder of Attachment Theory, defined attachment as the special and powerful connection formed between infant and caregiver that determines the emotional experiences of people "from cradle to grave" (Bowlby, 1977; 1980). According to attachment theorists, the primary attachment figure is often the mother (Ainsworth et al., 1978; Bowlby, 1980; Hazan & Shaver, 1987). Giving positive reactions to signs of distress and uneasiness are important in the selection of the primary attachment figure (Hazan & Shaver, 1994). Bowlby (1969) suggested that adults with whom attachment relationships are built after the mother are the secondary attachment figures. When primary attachment figures are not present, children need subsidiary figures with whom they feel comfortable, which are called secondary attachment figures. According to Bowlby's Attachment Theory, teachers are the secondary attachment figures for children. Kindergarten teachers, in particular, are among the significant adult figures with whom children can place trust and build secure base relations in the absence of their mothers (Bowlby, 1969).

Secure base relations with teachers have significant impacts on children. The impact of secure base relations with teachers is particularly focused on children's emotional behaviours. Secure base teacher-student interaction is an important emotional base that helps children to cope with negative emotions such as stress and anger, maintain safe relations in the school setting and supports their well-being at school (Denham & Weissberg, 2004; Collie, Shapka & Perry, 2011). Howes, Matheson and Hamilton (1994) found in their study that children who receive positive reactions from their teachers have higher levels of peer-recognition. Pianta and Stuhlman (2004) drew attention to child-teacher relations in the preschool period, emphasizing that positive relations provide a basis for children's adaptive behaviours and coping skills in times of hardship, while negative relations cause social behaviour incompetence and aggressive behaviour against peers. Hughes and Cavell (1999) reported that positive teacher-child interactions cause a decline in the aggressive behaviours of children. On the other hand, it has been reported that children who fail to build secure base relations with teachers have negative attitudes towards school (Baker, 1999) because teachers' emotion regulation skills such as reducing stress and managing anger are significant references for children (Collie, Shapka & Perry, 2011).

Another significant aspect influenced by children's emotion regulation skills and trust-based relations is the attitude they develop towards school in terms of whether they feel secure at and attached to school. Feeling valued by teachers is deemed important for the development of children's self-confidence and self-esteem. Children who feel valued in the school setting have significant social and emotional advantages. Positive teacher-student relations are important for improving academic achievement and motivation, as well as a sense of love and belonging to school (Pianta, 1994). Secure base relations with teachers reflect on children's behaviours, particularly their emotional behaviours. Secure base teacher-student interaction is an important emotional base that helps children to cope with negative emotions such as stress and anger, maintain safe relations in the school setting and supports their well-being at school (Denham & Weissberg, 2004; Collie, Shapka & Perry, 2011). Pianta and Stuhlman (2004) drew attention to child-teacher relations in the preschool period, emphasizing that positive relations provide a basis for children's adaptive behaviours and coping skills in times of hardship, while negative relations cause social behaviour incompetence and aggressive behaviour against peers.

Based on the findings of the literature review, it is possible to say that children's emotion regulation skills, secure base relations with teachers and school-attachment levels both affect and are affected by each other and these three aspects have a significant impact on children's development, particularly in the preschool period. In the context of these three important topics, a comprehensive local literature review of measurement scales designed for assessing children's emotion regulation skills revealed several studies: Cognitive Emotion Regulation Questionnaire-k developed by Garnefski et al. (2007) for the mid-childhood period and adapted by Turan (2020), the story-based scale adapted by Ecrili and Ogelman (2015) for preschool children aged 5 to 6, the Emotion Regulation Strategies Scale developed by Gust (2014) for 3-6 year-old children in Germany, the story-based Preschool Emotion Regulation Scale developed by Yılmaz and Zembat (2021) for 48-72 month-old children and the Emotion Regulation Scale developed by Shields and Cicchetti (1997) and adapted by Batum and Yağmurlu (2007) for 4-6 year-old children. Local literature includes the Teacher Student Relations Scale developed by Pianta (2001) and adapted by Beyaztürk (2005) for 4–6-year-old children. The scale includes Conflict, Proximity and Addiction sub-scales. Of these sub-scales, proximity indicates emotional proximity between teachers and students and higher total scores indicate positive relations and a sense of proximity in the school

environment. The short form of the Student – Teacher Relationship Scale (STRS) developed by Pianta (1999; 2001) was adapted into Turkish by Şahin-Ası and Karabay (2018). The short form of the scale only includes the proximity and conflict sub-scales.

The literature review on children's emotion regulation skills, secure base relations with teachers, and level of attachment to school indicates that there several scales in these topics, particularly for the preschool period. This scale adaptation is considered to contribute to the local literature in terms of the variety and alternatives of scales for assessing children's emotion regulation skills, secure base relations with teachers and their sense of belonging and attachment to school. A remarkable aspect of the adapted scale is that the level of emotion regulation skills and secure base relations with teachers function as predictors in identifying children's sense of belonging and attachment to school. As in the local literature, no scale was found in the international literature that possesses those psychometric features. In this context, adaptation of the scale into Turkish culture is deemed particularly important. The factor that makes the Turkish adaptation important is also the fact that no measurement tool was found in the literature review that was adapted from Portuguese culture into Turkish culture. Cultural adaptation studies in the local literature mostly involve scales designed in the English language. It is considered that the adaptation of this scale might contribute to the assessment of the similarities and differences as well as the cultural adaptation between the two cultures.

2. METHOD

2.1. Participants

Preschool teachers working in kindergartens in Süleymanpaşa, Tekirdağ affiliated to the Ministry of National Education participated in the study to adapt the Teachers' Ratings of Child Secure Base Behaviour and Emotion Scale into Turkish culture. Kline (2014) suggested that the minimum sample size must be two times the number of items in adaptation studies and that the sample should be ten times the number of items. In this context, 48–72-month-old children who had attended school for a minimum of two months were included in the study and 59 preschool teachers completed the Teachers' Ratings of Child Secure Base Behaviour and Emotion Regulation Scale for 295 children. Schools were selected for the study using the simple random sampling method.

Demographic data of teachers and children involved in the pilot study for scale adaptation are presented in Table 1.

Table 1. Demographic Data of Children and Teachers in the Study

Demographic Information	F	%
Information on Children		
Gender		
Girl	153	51.9
Boy	142	48.1
Month Range		
48-60 Months	140	47.5
60-72 Months	155	52.5
Information on Teachers		
Gender		
Female	59	100
Male	-	-
Seniority		
0-5 years	12	20.3
6-10 years	25	42.5
11-15 years	19	32.5
16-20 years	3	5.1
Graduation Degree		
Undergraduate	56	94.9
Master's	3	5.1

Table 1 shows that 51.9% of children included in the study were girls, while 48.1% were boys. Additionally, 47.5% were between 48 and 60 months and 52.5% were between 60 and 72 months. The mean age of the children was 61.10±6.59 months. 100% of teachers involved in the scale adaptation study were female and 20.3% had 0-5 years of professional experience, 42.5% had 6-10 years, 23.5% had 11-15 years, and 5.1% had 16-20 years of experience. In terms of educational level, 94.9% had a bachelor's degree and 5.1% had a postgraduate degree.

2.2. Instruments

In the study to adapt the Child Secure Base Behaviour and Emotion Regulation Scale to Turkish culture, a General Data Form designed by the authors and the Teacher's Ratings of Child Secure Behaviour and Emotion Regulation Scale were used as measurement tools. For criterion validity, the Emotion Regulation Scale (ERS) and Teacher Student Relations Scale (TSRS) were used.

General Data Form

The General Data Form is a 5-item measurement tool designed to collect the demographic data of the teachers and students involved in the study. The General Data Form includes questions on the children's gender and age, teachers' gender, educational status and professional experience.

Teachers' Ratings of Child Secure Base Behaviour and Emotion Regulation (PCV-P) Scale

The Teachers' Ratings of Child Secure Base Behaviour and Emotion Regulation Scale was developed by Dias, Soares and Freire (2004) in order to assess preschool children's emotion regulation skills, secure base relations with their teachers and sense of belonging to school and school attachment. The scale includes 28 items and two subscales. The first subscale is "Emotional Self-regulation" and the second is "Secure Base Behaviours". The Emotional Self-Regulation sub-scale includes 12 items numbered "2, 4, 6, 9, 11, 14, 16, 18, 21, 23, 25, 27" and the Secure Base Behaviours subscale includes 16 items numbered "1, 3, 5, 7, 8, 10, 12, 13, 15, 17, 19, 20, 22, 24, 26, 28". Eight items in the Emotional Self-regulation sub-scale, which are items "4, 6, 9, 11, 14, 16, 21, 25", two items in the Secure Base Behaviours subscale, namely "7 and 28", are reverse coded.

Higher scores in the Emotional Self-regulation subscale indicate stronger emotion regulation skills in children. Higher scores in the Secure Base Behaviours subscale mean that children display more secure base behaviours towards their teachers, attach to them and use them as a secure base to a greater extent. Total scores in the subscale in addition to the subscales reflect the quality of children's relations in the school setting by means of their school behaviour. Higher total scores indicate more positive school perceptions and sense of security in the school setting. Maximum and minimum total scale scores and subscale scores are 140 and 28 for the total scale score, 60 and 12 for the Emotional Self-regulation subscale and 80 and 16 for the Secure Base Behaviour subscale, respectively (Dias, Soares and Freire, 2004).

The form, completed by teachers, is a 5 Likert-type scale. The items are scored from 1 to 5 ranging from 1: Totally Disagree to 5: Totally Agree. Teachers respond to the scale items according to their observations of children's behaviours towards themselves and their peers in the last two months. Dias, Soares and Freire (2004) identified the Cronbach's alpha coefficients of the respective subscales to be .93 for "Secure Base Behaviours" and .89 for "Emotion Self-regulation" and .93 for the total scale score.

2.3. Procedure

Ethical approval was firstly obtained in order to carry out the study. Then, the ethical approval was submitted to the Turkish Republic Ministry of National Education to obtain permission to conduct the study in

Süleymanpaşa district of Tekirdağ province. After completing the official procedures, school principals were informed about the goal and content of the study. The authors interviewed the preschool teachers working with 48- to 72-month-old children and handed them voluntary consent forms that described the goal and content of the study. 48–72-month-old, normally developing children from two parent families who had no chronic diseases and had attended school for a minimum of two months were identified in voluntary teachers' classes and their parents were given parent consent forms that explained the goal and content of the study. Teachers participated in the study for children whose parents permitted them to fill in forms. A total of 59 preschool teachers filled in the forms for 295 children who met the relevant criteria.

The first step before the adaptation study involved translating the scale. The source language was Portuguese and the target language was Turkish. The translation process involved translating from the source language to the target language, reviewing and comparing the translations, translating the scale from the target language back to the source language and the designing the preliminary form of the translated text. The scale was translated from Portuguese to Turkish by three independent experts in Portuguese and Turkish languages and cultures. As it was not possible to bring the translators of the scale texts together, the translations were reviewed by three other experts in Portuguese and Turkish languages and cultures to create its final form. This Turkish form was translated from Turkish back to Portuguese by three experts who did not participate in the translation and review processes in the first stage. It was verified by two experts of both languages that the three Portuguese translations overlapped with each other and the original text, which ended the translation stage. The translation process involved fourteen experts, including eleven who were experts in both Portuguese and Turkish cultures, two Turkish language experts and one expert preschool teacher.

After the translation of the scale was completed, it was necessary to test its language validity in order to increase the validity and reliability of the measurement tool. First, the original form of the test underwent several structural modifications before its language validity was tested (Seçer & Gençdoğan, 2020). In this stage, user instructions were added to the Turkish scale and its final form was established.

2.4. Language Validity Test

For the language validity test, the final form of the scale in the target language and the original form were given to a group of at least 30 people

who knew both languages consecutively in the same session, in different sessions after a short interval or by dividing the scales into two halves in the same or different sessions. After this process, the language validity of an item was accepted if correlations of participants' scores in both scale items were + 0.80 or over (Erkuş & Selvi, 2019). In this study, five teachers with a knowledge of both cultures and who were working with 48–72-month-old children first completed the original scale then the Turkish version independently for 10 children each.

To identify language validity, the Cronbach's alpha coefficient was calculated in order to find the internal validity of the two languages separately. The Cronbach's alpha of the Turkish form was found to be .963, and the Portuguese form .964, which indicated a very high level of intra-item validity level in both languages. Then, the Wilcoxon test was carried out in order to determine whether there was a significant difference between the total scale scores and subscale scores in the two languages and no significant difference was found between each item in Turkish and Portuguese (p=.922). Finally, the Pearson correlation coefficient was calculated for the consistency between responses to the Portuguese and Turkish forms of the scale. It was found that the correlation coefficients between the data obtained from the Turkish and Portuguese forms ranged between .967 and 1.00 (p=.000). In other words, the Turkish item scores and Portuguese item scores differ together. A strong linear correlation was identified between the Turkish and Portuguese item and total scale scores. As a result of the findings, the language validity of the scale was verified.

2.5. Scope Validity Test

Scope validity is the extent to which measurement tool items reflect the feature being measured (DeVellis, 2016). Scope validity ratio assessed using the six-step Lawshe technique developed by Lawshe (1975). These steps consist of identifying the field experts whose views will be requested (between 5 and 40), drafting the assessment form, obtaining expert views, determining the scope validity ratio of the scale items, identifying the scope validity index of the scale items, and creating the final form of the scale according to the scope validity ratio and scope validity index values (Lawhse, 1975). In this context, 13 experts were asked for their views to calculate the scope validity. These experts rated each item as "applicable" or "inapplicable". The obtained data were used to calculate the Scope Validity Ratio (SVR) and Scope Validity Index (SVI). The analysis showed that the fit ratio by experts ranged between .85 and 1.00, thus indicating that the fit index was high for each item. It was found that the scope validity ratio of the

items ranged between .69 and 1.00. According to Lawshe (1975), the scope validity ratio must be over .54 in assessments carried out by 13 experts. The scope validity index of all items was found to be .90. Items of the scale formed according to the analysis results were found to be applicable by the experts. In addition to the Scope Validity Ratio and Scope Validity Index, two experts were chosen at random from the 13 experts and the consistency between their assessments was identified by using the fit index and PABAK (**P**revalence **A**djusted **B**ias **A**djusted **K**appa) coefficient. The PABAK Coefficient, which is more effective than the Kappa coefficient, was proposed by Byrt, Bishop and Carlin (1993). The two experts chosen at random from the 13 experts were numbered 3 and 7. Two experts compromised in 23 of the 28 items. In other words, they assessed 85% of items to be applicable. As PABAK coefficient is derived with the formula (2*P0)-1 formula, chance-free fit between experts was .64. The findings revealed that both the fit index and PABAK coefficient were high for each item; in other words, assessments of the two randomly chosen experts were 100% compatible and they compromised on every item. The scope validity of the scale was verified according to these findings.

2.6. Pre-pilot Practice

It is suggested that in scale adaptation studies, a pre-pilot stage should be conducted with a group of participants (8-10 people) reflecting the sample group before the pilot study. The goal of the pre-pilot study is to assess the comprehensibility of the scale items, response time and application method and eliminate any semantic or practical disorder (Erkuş & Selvi, 2019). In this context, the Teachers' Ratings of Child Secure Base Behaviour and Emotion Regulation Scale was presented to 20 teachers working with 48–72-month-old children who were asked for their views on the comprehensibility of the instructions and items in the scale. It was found that there were no instructions or items that the teachers could not understand. The pre-pilot stage was followed by the pilot study. Statistical calculations of the pilot study were carried out with LISREL (ver. 9,1) and SPSS (25,00) programs.

3. RESULT

In the pilot study of this research, structural validity was firstly checked with data obtained from scales filled by 59 teachers for 295 children. Confirmatory factor analysis was carried out and criterion-related validity was checked in the structural validity study. Cronbach's Alpha Reliability and Test- Re-test Reliability were performed to verify the scale reliability.

3.1. Validity

Structural validity was firstly checked for the scale validity test. Confirmatory factor analysis (CFA) was carried out in the first step. In CFA, factor loads of items, path diagram of factor loads, and the fit index of scale items to the factor structure were calculated.

As multivariate normality assumption was not met between items with CFA, parameter estimation was carried out with the Robust Unweighted Least Squares method and Asymmetric covariance matrix. Factor load values of items *(Lambda)*, square of multiple correlation that identifies the correlation between each item and implicit variable (r^2) and *t* values that show correlation significance were analysed. The results showed that the t values of all items were significant and over ±1.96 ($p<.005$). According to the path diagram of factor loads of scale items, the factor loads ranged between .30 and .83.

The model-data fit index of this 28-item scale is shown in Table 2.

Table 2. Fit index of scale items for factor structure

Goodness of Fit Index	**Value**
X^2/sd	566.10/349 = 1.62
GFI	.99
CFI	.99
NFI	.97
NNFI	.99
RFI	.96
S-RMR	.056
RMSEA	.071

According to Table 2, resemblance rate chi-square statistics is $X^2(349) = 566.10$ P<,01, the rate of the chi-square statistics to the degree of freedom is (X^2/sd)=1,62, the root mean square approximation error is (RMSEA)=0,071, the Standardized root mean square residual is (S-RMR)=0,056, comparative fit index is (CFI)=.99, goodness of fit index is (GFI)=.99, normed fit index is (NFI)=,97 and relative fit index is (RFI)=.96.

3.1.1 Criterion Related Validity

After the structural validity test, the Criterion Related Validity of the scale was verified. In this context, to check the concurrent validity of the Teachers' Ratings of Child Secure Base Behaviour and Emotion Regulation Scale, the emotion regulation subscale score of the Emotion Regulation Scale (ERS) was used for the emotional self-regulation subscale, the

proximity subscale score of the Teacher Student Relations Scale (TSRS) for the secure base behaviours sub-scale and the total score of the Teacher Student Relations Scale (TSRS) for the total score.

Emotion Regulation Scale (ERS)

The Emotion Regulation Scale is a measurement tool developed by Shields and Cicchetti (1997) and adapted to Turkish by Batum and Yağmurlu (2007), which assesses the emotional reactions of children from the preschool period to the age of seven as well as whether they regulate their emotions according to environmental conditions. The scale includes 24 items and two subscales. The first is the emotion regulation subscale and the second is the lability/negativity subscale. The Emotion regulation subscale assesses children's emotion regulation skills according to their environment and the lability/negativity subscale assesses their emotional reactiveness. The scale can be completed by mothers and teachers. It was found that the scale's Cronbach alpha internal consistency coefficients were .73 for the emotion regulation subscale and .75 for the lability/negativity subscale. The maximum score of the scale is 120, and the lowest score is 24 (Batum & Yağmurlu, 2007). In the validity test of this study, the scale was filled in by teachers.

Teacher-Student Relations Scale

The Teacher-Student Relations Scale was developed by Pianta (2001) and adapted to Turkish by Beyaztürk (2005). The scale, administered to 4-6 years old children, is completed by teachers for each child separately and focuses on teacher-student relations. The 5-point Likert-type scale involving 28 items has three subscales: conflict, proximity and addiction. The conflict subscale assesses child's negative behaviour, negative emotional interactions perceived by the teacher and negative relations between the child and teacher. The proximity subscale assesses positive emotional interactions between the teacher and student and whether the student recognizes the teacher as a supportive adult and uses him/her as an effective resource. The addiction subscale assesses the extent to which the teacher considers the student addicted to himself/herself. A high level of addiction indicates negativity. A high total score in the scale indicates positive relations in the school setting and perceived proximity. The Cronbach's alpha coefficients were found to be .84 for the conflict subscale, .80 for the proximity subscale, .72 for the addiction subscale and .86 for the total scale score.

In the criterion related validity test, the Cronbach's alpha coefficients were firstly calculated to determine the internal consistency of the focus scales and criterion scales, followed by Pearson correlation analysis to determine the correlations between the scales. The results are presented in Table 3.

Table 3. Internal Consistency and Pearson Correlation Analysis Results in Criterion Related Validity Test

	Internal consistency results	**Pearson correlation analysis results**	
Focused/Criteria Scale	**Cronbach's Alpha**	**r**	**p**
Emotional Self-Regulation subscale /	.926	.862	.000
Emotion Regulation subscale	.917		
Confidence-Based Behaviours subscale	.960	.962	.000
Proximity subscale	.927		
Teachers' Ratings of Child Secure Base Behaviour and Emotion Regulation Scale	.970	.977	.000
Teacher-Student Relationship Scale	.977		

According to the internal consistency results of the criterion validity test of the emotion self-regulation subscale shown in Table 3, the Cronbach's alpha coefficients were found to be .926 for the emotional self-regulation subscale and .917 for the emotion regulation subscale, while the Pearson correlation analysis coefficient between the two scales was r =.862; p= .000; the internal consistency results of the criterion related validity test of the Secure Base Behaviour subscale showed that the Cronbach's alpha coefficients were .960 for the Secure Base Behaviour subscale and .927 for the Proximity subscale, while the Pearson correlation analysis coefficient between the two scales was r =.962; p= ,000; the internal consistency results of the criterion related validity test of Teachers' Ratings of Child Secure Base Behaviour and Emotion Regulation Scale total score showed that the Cronbach's alpha coefficients were .970 for the Teachers' Ratings of Child Secure Base Behaviour and Emotion Regulation Scale and .977 for the Teacher-Student Relations Scale, while the Pearson correlation analysis coefficient between the two scales was r =.977; p= .000.

3.2. Reliability

Cronbach's Alpha reliability and Test Re-test reliability were calculated to verify the reliability of the Teachers' Ratings of Child Secure Base Behaviour and Emotion Regulation Scale.

3.2.1. Cronbach Alpha Reliability

The Cronbach's Alpha Reliability test of Teachers' Ratings of Child Secure Base Behaviour and Emotion Regulation Scale involved the calculation of factor loads, item total correlations and Cronbach's alpha reliability coefficients. It was found as a result of the calculations that the item factor loads ranged between .323 and .879, the factor loads of all items were over 0.30, and the item total correlations (also known as item validity coefficients) ranged between .307 and .866. Cronbach's alpha coefficients were found to be .926 for the emotional self-regulation subscale, .960 for the secure base behaviour subscale and .970 for the total scale.

3.2.2. Test Re-test Reliability

Two repeated sessions were carried out for the test re-test reliability. Cronbach's alpha coefficients were calculated in these sessions to identify the internal consistency of both applications and then the Pearson correlation coefficient was calculated for the consistency between the total scale scores made in repetitive applications. Thus, the Cronbach's alpha coefficients of the first and second application were found .969 and equal. The Pearson correlation between the two measurements was found to be r=.996; p=.000.

4. DISCUSSION

The goal of this study is to adapt the Teachers' Ratings of the Child Secure Base Behaviour and Emotion Regulation Scale into Turkish culture. In this context, translation was the first step of the study. The translation stage involved translating the scale from the source language to the target language, reviewing and comparing the translations, translating the scale from the target language back to the source language and then establishing the preliminary form of the translated scale. Then, the language validity was checked in order to strengthen the validity of the measurement tool, followed by the scope validity check in order to identify the extent to which the measurement tool items reflected the content features that were aimed to be assessed. The following step was the pilot study and designation of the scale for the pilot study. Reliability and validity were checked with data obtained from the pilot study.

In the pilot study stage of the scale adaptation, 59 preschool teachers filled in the scale for 295 children. Children included in the study were between 48 and 72 months old. A total of 4 teachers were involved for 92 six-year-old children for the development of the original scale. Adaptation of the scale into Turkish culture was intended for 48–72-month-old children. For this purpose, 140 children aged 48-60 months (47.5%) and 155 children

aged 60-72 months (52.5%) were included in the study. The analysis results showed that the Teachers' Ratings of Child Secure Base Behaviour and Emotion Regulation Scale is a reliable and valid measurement tool for 48–60-month-old children in addition to 60–72-month-old children. On the other hand, 59 teachers participated in the study to adapt the scale to Turkish culture. As scale assessment is based on teachers' observations, it is emphasized that a child has been attending the same class for a minimum of two months so that the teacher can carry out proper observations. Adaptation study data were collected during the Covid-19 pandemic. The health conditions during this period caused limitations in terms of the number of children attending school regularly for a minimum of two months. Therefore, data were collected for assessment from 59 preschool classes that met the relevant criteria.

4.1. Structure Validity

The process of checking the validity of scale began after the end of the pilot study. This stage of the validity check was concerned with its structural validity. Structural validity is the type of validity that reflects the extent to which the scale results represent the implicit variable or the structure that it is considered to represent (Behling & Law, 2019). The data were first subjected to confirmatory factor analysis in order to test the structural validity of the scale. In scale adaptation studies, confirmatory factor analysis is carried out in order to check whether a predetermined structure is verified in the target language (Bayram, 2010). Confirmatory factor analysis is a type of analysis that is carried out in order to identify whether a scale with a factorial structure identified in a given culture has a factorial structure in the source culture (Behling & Law, 2019). In this context, the scale with 28 items and two subscales was tested with Confirmatory Factor Analysis (CFA). In CFA, factor load values of items (*Lambda),* multiple correlation square (r^2) that defines the level of correlation between each item and implicit variable and the value that shows their significance level, factor loads of items and fit index were calculated. t values obtained in CFA must not be lower than 1.96. If the *t* values are lower than this value, the items are deemed insignificant and must be removed from the scale.

The t value of every item is expected to be over 1.96 for the model to be verified (Schumacker & Lomax, 2010). The findings show that the t values of all items are over ±1.96. On the other hand, the factor loads of the items range between .34 and .83. Tabachnick and Fidell (2001) reported that factor loads of items must be over .32. Çokluk, Şekercioğlu and

Büyüköztürk (2021) reported that factor loads between .30 and .59 indicate a medium level factor and factor loads over .60 mean a high-level factor, regardless of their positivity or negativity. Values obtained in the analysis show that factor loads of the scale items are in the acceptable interval.

In the goodness of fit index calculations for the factor structure of the scale items, likelihood ratio chi-square statistics was found to be $X^2(349) =566.10$ P<.01, the rate of chi-square statistics to the degree of freedom was (X^2/sd) = 1.62, the root mean square approximation error was (RMSEA)=0.071, the standardized root mean square residual was (S-RMR)=0.056, the comparative fit index was (CFI)=.99, the goodness of fit index was (GFI)=.99, the normed fit index was (NFI)=.97 and the relative fit index was (RFI)=.96.

In goodness of fit index calculations, the p value must be taken into account in likeliood ratio chi square statistics. A significant p value is an unfavourable condition; however, this value is often significant in CFA due to the large sample size. Therefore, other fit indexes must also be assessed (Çoluk, Şekercioğlu & Büyüköztürk, 2021). When the rate of chi-square statistics to the degree of freedom is assessed, it is seen that the rate is (X^2/sd)=1.62. Kelloway (1998) reported that χ 2 /df <2 indicates a perfect fit, while χ 2 /df <3 denotes an acceptable fit. Thus, in this case, it can be seen the rate of chi-square statistics to the degree of freedom displays a perfect fit. The root means square approximation error had a value of .071.

Jöreskog and Sörbom (1993) reported that a root means square approximation error below .05 indicates a perfect fit whereas a value below .08 indicates a good fit. Thus, that the results indicate that the root mean square approximation error is in the acceptable range. The Goodness of fit index (GFI) is .99. Baumgartner and Homburg (1996) reported that a GFI value between .95 and 1.00 indicates a perfect fit whereas a value between .90 and ,95 indicates a good fit. GFI value in this study indicates A perfect fit. Moreover, Sümer (2000) reported that normed Fit Index (NNFI) and comparative fit index (CFI) values over .95 indicate a perfect fit and a value over 90 indicates a good fit. In this study, the values were (NNFI)=.99 and (CFI)=,99 values, thus indicating a perfect fit. The normed fit index (NFI)=.97 and comparative fit index (RFI)=.96 also indicate perfect fit (Kline, 2014). On the other hand, the standardized root mean square residual value (S-RMR) is 0.056. Brown (2006) reported that a standardized root means square residual value below .05 indicates a perfect fit, while a value below indicates a good fit and a value below .10 denotes a weak fit. Hu and Bentler (1999) reported that S-a RMR value below .08 indicates a good fit.

Thus, the results indicate that the standardized mean square root residual value obtained in the analysis indicates a good fit. The value for the final fit index, Root-Mean-Square Error of Approximation (RMSEA), is .08 which also indicates a perfect fit (Kline, 2014).

Şeker and Gençdoğan (2020) reported that exploratory factor analysis is not necessary and structural validity of the scale must be verified in cases where the factorial structure of the target culture is verified with CFA. With the data in hand, the structural validity of the 28-item and two-dimension scale was verified. All fit indexes indicated perfect or good fit in the accepted structure. These values therefore suggest that the scale has a strong structure in Turkish culture.

4.2. Criterion Related Validity

Criterion related validity is a type of validity that is based on the calculation of the correlation between scores for a scale that is subjected to a validity test and the scores of similar measurement tools' reliability and validity that were previously verified (Erkuş, 2021). Criterion related validity is divided into two: concurrent validity and predictive validity. In this study, concurrent validity was calculated. Concurrent validity is achieved by calculating the correlation between participants' scores in the adapted/developed measurement tool and their scores in a measurement tool that assesses the same or similar features (Büyüköztürk, 2019). In the criterion validity test, the first step was to calculate the Cronbach's alpha coefficients, which meant the internal consistency between the focus scale and criterion scales. Then, the correlation of the consistency between the focus scales and criterion scales was calculated. Büyüköztürk (2019) reported that Cronbach's alpha coefficients between .70 and 1 are acceptable and values closer to 1 indicate higher internal consistency. Büyüköztürk (2019) also reported that a correlation coefficient of the relationship between two variables of between .30 and .70 indicates a medium level of consistency, while values below .30 indicate low a level pf consistency and values over .70 indicate a high level of consistency (Roscoe, 1975; Büyüköztürk, 2019).

In the criterion related validity test of the emotional self-regulation subscale, the focus was emotional self-regulation, while the criterion was the emotional regulation subscale. The internal consistency results show that the Cronbach's alpha values obtained from the focus and criterion scales were .926 and .917, respectively. It is seen that the internal consistency levels of both scales are very high. Correlation statistics calculations on the

consistency between scale scores of the emotion regulation subscale and of the emotional self-regulation subscale show that there is a positive strong correlation between the emotional self-regulation subscale scores and emotion regulation subscale scores (r = ,862; p= ,000). In other words, scores in the emotion regulation subscale, which is the criterion scale, increase as the emotional self-regulation subscale scores increase or scores in the emotion regulation subscale, which is the criterion scale, decrease as the emotional self-regulation subscale scores decrease. As expected and desired, a positive high correlation was found and criterion validity was verified for the emotional self-regulation subscale with these findings.

In the criterion validity test of the secure base behaviour subscale, the focus was the secure base behaviour subscale scores and the criterion was the teacher-student relations scale proximity subscale scores. The international consistency results related to the criterion related validity of the secure base behaviour subscale show that the Cronbach's alpha coefficients obtained from the focus and criterion scales are .960 and .927, respectively. According to the Cronbach's alpha coefficients of the two subscales, both have a relatively high level of internal consistency. Correlation calculations were carried out for the consistency between the scales scores (criterion scores) of the proximity subscale and secure base behaviour subscale and a highly significant positive correlation was found between the two subscales (r=.962; p=.000). In other words, scores in the proximity subscale, which is the criterion scale, increase as the secure base behaviour subscale scores increase or scores in the proximity subscale, which is the criterion scale, decrease as the secure base behaviour subscale scores decrease. As expected and desired, a positive and significant correlation was found. The criterion validity of the secure base behaviour subscale was thus verified with these findings.

Here, the focus is the scores in the 28-item Teachers' Ratings of Child Secure Base Behaviour and Emotion Regulation Scale and the criterion scores are the scores in the 28-item Teacher-Student Relations Scale itself. According to the internal consistency results related to the criterion related validity of the Teachers' Ratings of Child Secure Base Behaviour and Emotion Regulation Scale, the Cronbach's alpha coefficients obtained in the focus and criterion scale are .970 and .977, respectively. It is seen that the internal consistency levels of both scales are very high according to these Cronbach's alpha values. Correlation statistics between the scale scores in the Teacher-Student Relations Scale (criterion scale) and the scores in Teachers' Ratings of Child Secure Base Behaviour and

Emotion Regulation Scale show that there is a positive and high-level correlation between total scale scores (r= .977; p= .000). In other words, scores in the Teacher-Student Relations subscale, which is the criterion scale, increase as the Teachers' Ratings of Child Secure Base Behaviour and Emotion Regulation Scale scores increase or scores in the Teacher-Student Relations subscale, which is the criterion scale, decrease as the Teachers' Ratings of Child Secure Base Behaviour and Emotion Regulation Scale scores decrease. As expected and desired, a positive and significant correlation was found and the criterion validity of the total scale score was verified.

4.3. Reliability

Reliability is an indication of the consistency between the results obtained with a measurement tool in repeated measurements under the same conditions. The Alpha coefficient, developed by Cronbach (1951), is a method used very often in calculating reliability. Cronbach's method is suitable for Likert type measurements (Cronbach, 1951). One of the other reliability test methods is the test re-test reliability. In this technique, the same test is administered to the same group at a certain interval and the Pearson correlation between the two applications is calculated. The correlation coefficient that is obtained indicates the extent to which the test displays measurement stability. An interval of one month is suggested between the two applications (Büyüköztürk, 2019). In this context, the Cronbach's alpha method and test re-test method were used in order to identify the reliability of the scale as part of the adaptation of the Teachers' Ratings of Child Secure Base Behaviour and Emotion Regulation Scale to Turkish culture. In the test re-test method, the second test was administered after a one-month interval.

It is seen that factor loads of the items range between .323 and .879 according to the item total correlation and Cronbach's alpha reliability coefficients. The relevant literature emphasizes that factor loads must be over .30 (Seçer, Halmatov & Gençdoğan, 2013). The findings show that the factor loads of all items are over .30 and the item total correlations, also known as item validity coefficients, range between .307 and .866, which are appropriate values. On the other hand, Cronbach's alpha coefficients were found to be .926 for the emotional self-regulation subscale, .960 for the secure base behaviour subscale and .970 for the total scale. Although there is no definitive guideline on the lower limit of the Cronbach's alpha reliability coefficient, it is stated in resources that it must be over .70 and the alpha coefficient is expected to be close to 1. Reliability coefficient values close to

1 indicate high-level reliability and strong internal consistency between items (Büyüköztürk, 2019). The findings obtained in the analysis prove the reliability of the total scale and subscales. In their scale development study, Dias, Soares and Freire (2004) found the following Cronbach's Alpha coefficients for the subscales: .93 for the "Secure Base Behaviour" subscale, .89 for the "Emotional Self-regulation" subscale and .93 for the total scale score. It is seen that the Cronbach's alpha coefficients of the scale are high in both cultures.

4.4. Test Re-test Reliability

Test re-test reliability is carried out by administering the measurement tool to the same group at two different times in order to calculate the Pearson coefficient between the scores obtained in two applications, identify the stability coefficient to test the reliability of the scale (Behling and Law, 2019). It is reported that a correlation coefficient between .30 and .70 indicates a medium level correlation between two variables, while a coefficient below .30 indicates a low correlation and a coefficient over .70 means the correlation level is high (Roscoe, 1975; Büyüköztürk, 2019). Thus, a positive, high and significant correlation was found between the scale scores obtained in the first and second application (r=.996; p=.000). In other words, there is strong stability between the scores from the two applications. According to the Cronbach's alpha reliability test, the internal consistency of the scale is very high and equal to each other in both applications.

5. LIMITATIONS AND FUTURE WORK

This study has several limitations. The study was limited to 48–72-month-old typically developing children attending preschool institutions in Süleymanpaşa, Tekirdağ province affiliated to the Ministry of National Education during the 2020-2021 academic year. Future studies might involve scale development for assessing 48–72-month-old preschool children in terms of their emotion regulation skills and secure base relations with their teachers. On the other hand, scales could be developed or adapted to assess the emotion regulation skills and secure base behaviours of children under 48 months. Another limitation of the study is that the measurement tool assesses children's emotion regulation skills and secure base relations with teachers based on a descriptive screening model and teachers' observations. Measurement tools could be developed or culturally adapted that assess their emotion regulation skills based on parents' views and observation or their secure base relations with teachers based on observation.

Lastly, the children who participated in the study had no clinical history; therefore, future studies might involve children with a clinical history.

6. CONCLUSION

As a result of the data collected and analysis carried out as part of this study to adapt the Teachers' Ratings of Child Secure Base Behaviour and Emotion Regulation Scale from Portuguese to Turkish, it is concluded that the scale is a valid and reliable measurement tool for Turkish culture. It can be suggested that scientific-based positive results have been achieved with this measurement tool adapted from Portuguese to Turkish by assessing the cultural fit between the two cultures in the context of significant concepts such as attachment and self-regulation that are based on a theoretical foundation and have behavioural and cognitive structures. This tool is also considered economic, practical and accessible as it is based on teacher observations and a teacher has the opportunity to observe children and the scale is a Likert-type scale. It is recommended that an assessment tool is introduced to the local literature that is easy to apply and widely accessible with this measurement tool, the cultural adaptation of which has been proven with scientific methods.

7. SUMMARY

Children's emotion regulation skills, their secure-based relationships with their teachers, their belonging to school and their level of attachment to school are among the most important issues of child developmental psychology. Based on the findings of the literature review, it is possible to say that children's emotion regulation skills, secure base relations with teachers and school-attachment levels both affect and are affected by each other and these three aspects have a significant impact on children's development, particularly in the preschool period. The literature review on children's emotion regulation skills, secure base relations with teachers, and level of attachment to school indicates that there several scales in these topics, particularly for the preschool period. The goal of this study is to adapt the Teachers' Ratings of Child Secure Base Behaviour and Emotion Regulation Scale into Turkish culture. The research group of the study included 295 children aged from 48 to 72 months. A total of 59 teachers participated in the adaptation study for the children. Data obtained were firstly used for confirmatory factor analysis in the scale validity test. According to the CFA results, a 28-item and two-factor structure of the scale was accepted with no need for any amendments. Strong significance was found between the reference scales and the scales on which the criterion-

related validity test focused. The Cronbach's alpha value of the scale was found to be .970 in the reliability test. A strong correlation was found between the two applications in the test re-test stage. The study findings reveal that the scale is a valid and reliable assessment tool for Turkish culture. This tool is considered economic, practical and accessible as it is based on teacher observations and a teacher has the opportunity to observe children and the scale is a Likert-type scale. It is recommended that an assessment tool is introduced to the local literature that is easy to apply and widely accessible with this measurement tool, the cultural adaptation of which has been proven with scientific methods.

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Çatışma beyanı: Makalenin yazarları, bu çalışma ile ilgili taraf olabilecek herhangi bir kişi ya da kurum ile finansal ilişkileri bulunmadığını, herhangi bir çıkar çatışmasında bulunmadıklarını beyan etmektedir.

Destek: Çalışmada herhangi bir kurum ya da kuruluştan destek alınmamıştır.

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