Research / Araştırma

Turkish Adaptation of Adult Parental Acceptance - Rejection Questionnaire Short Form

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ABSTRACT

Turkish adaptation of Adult Parental Acceptance - Rejection Questionnaire Short Form

Objective: The aim of the current study was to examine the reliability and validity of Adult Parental Acceptance - Rejection Questionnaire Short Form (Adult PARQ - Short Form) which can be used to assess adults' remembrance of parental acceptance-rejection in their childhood, in a normal population in Turkey.

Method: The study was conducted with two samples and in two phases. The first study, investigating the factor structure, composed of 424 women (62%) and 261 men (38%), in total 685 subjects between the ages of 18 and 63. A total of 201 university students including 163 women (81%) and 38 men (19%), between the ages of 18 and 25 took part in the second study, evaluating the criterion-related validity, discriminant validity and reliability. In this phase, in addition to Adult PARQ- Short Form, the Parental Bonding Instrument was used.

Results: In exploratory factor analysis, Mother Form of the scale revealed two factor structure (acceptance and rejection) and Father Form revealed three factor structure (acceptance, rejection and neglect). However confirmatory factor analysis showed that revised version of the scale which was obtained by displacing one item in the theoretically proposed 4-factor structure (item 13 was included in Warmth/Affection instead of Indifference/Neglect), represented better goodness of fit values. The scale represented good internal consistency, test-retest and split half reliabilities. Similarly, the criterion related and discriminant validity features of the scale were supported.

Conclusion: Adult PARQ- Short Form is a reliable and valid instrument evaluating adults' remembrance of parental acceptance and rejection in their childhood, to use in both clinical applications and scientific researches in Turkey.

Keywords: Parental acceptance-rejection, reliability, validity

ÖZET

Yetişkin Ebeveyn Kabul-Red Ölçeği – Kısa Form'un uyarlama çalışması

Amaç: Bu çalışmanın amacı, yetişkinlerin çocukluklarında anne ve babalarından algıladıkları kabul-redde dair algılarını değerlendirmede kullanılabilecek Yetişkin Kabul - Red Ölçeği – Kısa Form'un (Yetişkin EKRÖ/K) Türkiye'de normal örneklem için güvenirlik ve geçerliğini belirlemektir.

Yöntem: Çalışma, iki ayrı örneklem grubuyla iki aşamada yürütülmüştür. Ölçeğin faktör yapısının belirlendiği ilk aşamada, yaşları 18-63 arasında değişen 424 kadın (%62) 261 erkek (%38) olmak üzere toplam 685 katılımcı yer almıştır. Ölçeğin ölçüt bağıntılı geçerliği, ayırt edici geçerliği ve güvenirliğinin değerlendirildiği ikinci aşamaya ise 18-25 yaş arasında 163'ü kadın (%81) 38'i erkek (%19) olmak üzere toplam 201 üniversite öğrencisi katılmıştır. Çalışmada Yetişkin EKRÖ/K'nin yanı sıra, daha önce geçerlik ve güvenirliği saptanmış olan Ana Babaya Bağlanma Ölçeği kullanılmıştır.

Bulgular: Açımlayıcı faktör analizi sonucunda, ölçeğin Anne Formu için 2'li (kabul ve red), Baba Formu için ise 3'lü (kabul, red ve ihmal) faktör yapısı elde edilmiştir. Ancak doğrulayıcı faktör analizi bulguları, kuramsal olarak ileri sürülen 4-faktörlü yapıda bir maddenin yer değiştirmesi (13. maddenin kayıtsızlık/ihmal yerine sıcaklık/şefkat boyutuna dâhil edilmesi) ile yapılan düzeltilmiş versiyonun, daha iyi uyum indeksi değerlerine sahip olduğunu göstermiştir. Ölçeğin iyi düzeyde iç tutarlılık, test-tekrar test ve iki yarım test güvenirlik katsayılarına sahip olduğu bulunmuştur. Benzer şekilde, ölçeğin ölçüt bağıntılı ve ayırt edici geçerlik özellikleri de desteklenmiştir.

Sonuç: Yetişkin EKRÖ/K, Türkiye'de yürütülen klinik uygulamalarda ve bilimsel araştırmalarda, yetişkinlerin çocukluklarında anne ve babalarından algıladıkları kabul-redde dair anılarını değerlendirmede kullanılabilecek geçerli ve güvenilir nitelikte bir ölçektir.

Anahtar kelimeler: Ebeveyn kabul-reddi, güvenirlik, geçerlik

This study contains part of Master's thesis of the first author

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INTRODUCTION

The association of adverse childhood experiences with adulthood functioning and mental disorders is a topic frequently addressed both in psychological theories and in scientific studies. In a study in which the World Health Organization (1) examined the association of adverse childhood experiences with 20 mental disorders of adulthood, in 51,945 people living in countries with diverse socio-demographic characteristics, the presence of nonfunctional family patterns (e.g., parental mental disorder, abuse and neglect) was the major predictor, and all negative childhood experiences accounted for 29.8% of the disorders. There is a lot of evidence that the childhood parental relationships are not only associated with the emergence and progress of mental disorders but also with all basic aspects of life such as stress-coping (2,3), life satisfaction (4,5), romantic relationships (6-8), career orientation, job satisfaction and organizational behavior (9-11), long-term health problems in adulthood (12-15) and even early death (16,17). Therefore, it is considered that current mental health and functioning of an individual can be better evaluated by better understanding of the childhood parental relationships.

One of the methods to examine childhood parental relationships is to use self-report scales in which remembrances are evaluated. One of these scales is the Parental Acceptance-Rejection Questionnaire (PARQ) that was developed on the basis of Interpersonal Acceptance-Rejection Theory (IPARTheory). This theory was originally proposed by Rohner (18,19) as Parental Acceptance-Rejection Theory (PARTheory). However, after 2000s, the theory has been expanded to include romantic intimacy and other important interpersonal relationships (teacher, sibling, etc.) established throughout the life. Because of this paradigm shift, Rohner changed the name of the theory in 2014 and called it the IPARTheory (20). According to the theory, as in all interpersonal relationships, the parental acceptance-rejection is fundamentally based on the warmth dimension of interpersonal relationships. The warmth dimension of

parenting includes the quality of the emotional bond between the parents and the child, and the physical and verbal behaviors that parents use to express these emotions. Perceived "parental acceptance" takes place at one end of this dimension, while perceived "parental rejection" is at the other end. Parental acceptance refers to the warmth, affection, care, interest, support, or simply love that parents present to their children. Parental rejection means that parents do not present the abovementioned feelings and behaviors to their children; furthermore they express some physical or psychological behavior or emotions that hurt the child. According to Rohner, the parent can reject the child in four basic ways. First one is "cold and unaffectionate", which means the lack or deficiency of expressing physical (hugging, kissing, smiling etc.) or verbal (saying good words to the child, supporting, etc.) emotional warmth. Second one is, "hostile and aggressive" referring to hostile feelings, which means that parents feel anger, hate, animosity/bad intention or grudge and, resulting physical (beating, pushing, throwing something, etc.) and verbal (mocking, swearing, insulting, insulting and criticizing things to the child, etc.) aggressive behaviors. Third one is, "indifference and neglect", which means that parents are not sufficiently interested in the child's physical, medical, educational, social or emotional needs by being physically or psychologically unresponsive or inaccessible. Finally, "undifferentiated rejection" is defined as "the children's belief that parents do not care about or that they do not love them, even though there is no clear behavioral sign that parents neglect them or are unaffectionate or aggressive towards them." The premises of the theory have been supported by more than 550 studies conducted on children and adults worldwide, and 11 meta-analyzes, 5 of which are based on remembrances of adults (21-25). Besides, there is a lot of evidence that the remembered parental acceptance-rejection is associated with psychological maladjustment of adults and with many mental disorders that emerge in adulthood, primarily depression and substance abuse (26-35).

The PARQ has been developed by Rohner (36) to assess the individuals' perceptions regarding parental

acceptance/rejection within the framework of the above mentioned four structures. There are three versions of the PARQ, adult, child and parent. The Adult PARQ, which is the subject of this study, assesses adults' perceptions of how their parents have treated themselves when they have been at about seven and twelve ages. The scale consists of mother (Adult PARQ: Mother) and father (Adult PARQ: Father) versions consisting of exactly the same items. Each version also has long (standard - 60 items) and short (24 items) versions. All versions assess the perceived parental acceptance/rejection over four dimensions: warmth/affection, hostility/aggression, indifference/neglect, and undifferentiated rejection. The long version of adult PARQ, which has been translated into 48 languages, has been found to have adequate reliability and validity in all studies (25,37). The Turkish standardization of the long version of the scale was conducted by Varan (38) in both normal and clinical samples and the internal consistency coefficients of the mother and father versions were found to vary between 0.86 and 0.96. Factor analysis of the study showed that the two factors named as Rejection and Acceptance accounted for a total variance of 75.23% for the mother version and 74.87% for the father version. These findings show that the Adult PARQ long version reliably and validly assesses the remembrances of the adults in Turkey about their childhood parental relationships.

The Adult PARQ – Short version (Adult PARQ/S) was developed by Rohner (39) with selected items of the long version. The validity and reliability of the scale have been comparatively evaluated between American and Italian cultures, and it has been found to support the 4-factor structure proposed in the theory in both cultures, and to have reliability coefficients ranging from 0.73 to 0.91 (40). Similar results have been obtained in the standardization studies of the child (41,42) and parent (43) versions of the Adult PARQ/S; the scales have been found to have adequate reliability and validity.

In Turkey, Parental Bonding Instrument (PBI) is also used to assess the adults' childhood parental relationships (44). PBI evaluates the childhood parental relationships on the basis of attachment theory in terms of care and control. The low scores in the care subscale indicate that the child perceives the parents as refusing, cold and less caring. Adult PARQ/S on the other hand, unlike PBI, does not define parental rejection only with low acceptance scores. To be more precise, in the scale parental rejection is not limited with the lack of parental interest, acceptance, and care, but rather it details the individuals' remembrances of physical, verbal, and emotional violence and abuse that they faced in their childhood.

From this point of view, the aim of this study is to adapt Adult PARQ/S–which is becoming increasingly widespread in the world–for the normal population in Turkey. For this purpose, at first the factor structures of mother and father versions of the scale were evaluated by exploratory factor analysis. Then, the structure found by factor analysis was evaluated with confirmatory factor analysis (CFA) in terms of factor structures proposed in the theory to determine the most appropriate factor structure. In addition, criterion-related validity and discriminant validity have been examined in order to obtain further information on the validity of the scale. Finally, reliability of the scale was assessed by calculating internal consistency coefficients, test-retest reliability coefficients, split half reliability and item total correlations.

METHOD

The study was conducted in two phases, on two separate sample groups. In the first phase, the factor structure of the scale was determined on a sample group of 685 people. In the second phase, criterion validity, discriminant validity and reliability of the scale were assessed on a separate group of 201 college students.

In the first phase in which the factor structure of the Adult PARQ/S was evaluated, approximately 62% of the participants were women and composed by college students/graduates. The mean age of the participants was 27.51 (S=8.24, range=18-63) and approximately 79% had low and middle income levels. The second

phase, in which the validity and reliability of the scale was evaluated, was conducted on college students at Ankara University and Gazi University. Approximately 81% of the group was composed of women and participants from the low and middle socio-economic level. Data were collected for a second time from 64 subjects in this group (52 women and 12 men) for the test-retest.

Measures

Personal Information Form: It is a form developed by researchers to assess demographic information such as gender, age, and educational status of the participants.

Adult Parental Acceptance-Rejection Questionnaire – Short version (Adult PARQ/S): It was developed by Rohner (39) in order to assess the remembrances of the participants regarding parental acceptance-rejection in their childhood. This scale is a short version of the original 60-item Adult PARQ, which was developed by preserving the original scale structure. The questionnaire is answered for each of the parents separately. The scale, consisting of twenty-four items, has four subscales: warmth/affection (8 items), hostility/aggression (6 items), indifference/neglect (6 items) and undifferentiated rejection (4 items). Each item is responded on a 4-point Likert-type scale and scored as "almost always true" (4 points), "sometimes true" (3 points), "rarely true" (2 points), and "almost never true" (1 point). Scores of the subscales are obtained by the sum of the item scores they contain. Thus, the higher scores on the warmth/affection scale indicate the higher level of the warmth that the individual perceives; whereas the higher scores on other subscales indicate the individual's perceived rejection in parental relationship. Scale total score is obtained by the sum of all subscale scores. However, to do this, at first it is necessary to reverse-code all warmth/affection items, thereafter add to the other subscale scores. The higher total score indicates the higher level of rejection that the individual perceives in his

or her parental relationships. The score obtained from the scale ranges between 24 (highest level of acceptance) and 96 (highest level of rejection). The internal consistency coefficients of subscales of the original scale have been found as over 0.81, and confirmatory factor analysis has proved the 4-factor structure (40).

Parental Bonding Instrument (PBI): It was developed by Parker et al. (45) to retrospectively evaluate the childhood parental relationships. There are mother and Father Forms, each of which consisting the same 25 items and having two sub-dimensions of care (12 items) and control/over-protection (13 items). The participants are asked to complete the 4-point Likert-type scale considering the first 16 years of their lives, in the form of "Very like" (3 points) through "Very unlike" (0 points). The higher scores on the care sub-dimension indicate a warm, affectionate and receptive parental perception; the higher scores on the control/overprotection dimension indicate an over-controlling or autonomy preventing parental perception. Turkish standardization was accomplished by Kapci and Kucuker (44), and there were findings suggesting that the scale is valid and reliable. According to these results, similar to the original one, the scale showed a two-dimensional structure. But the items under each dimension and the reverse coded items were changed and redesigned as "care/control" and "overprotection" dimensions. Accordingly, the higher scores both in the global scale and the sub-dimensions are interpreted as positive parental bonding.

Procedure

Necessary permission for the study was obtained from the ethics committee of Ankara University. The translation of the scale from English has been done by Erkman and Yilmaz (personal communication, 2016). For this reason, the scale has not been re-translated, and the adaptation study has started after permission has been obtained from the authors and Center for the Study of Interpersonal Acceptance & Rejection. A written consent has been obtained stating that the

participants voluntarily participated in the study. In order to control the sequence effect, the two scales were applied in changing order, with the demographic form remaining constant. The admission procedure lasted approximately 15-20 minutes.

In the first phase of the study, 251 volunteer participants completed the hard copy scales and 434 participants completed the scales through the web-based data collection site "Surveey". In the second phase, only the hard copy scales were used. Of the 201 participants at this phase, only 64 of them have returned the test-retest. The test-retest time interval ranges from two to three weeks.

RESULTS

I. Validity Findings

a) Construct Validity (Exploratory and Confirmatory Factor Analysis)

In order to determine the construct validity of the scale, first, an exploratory factor analysis (EFA) was performed with Varimax rotation for each of the Mother and Father Forms. KMO value which is expected to be higher than 0.60 before the factor analysis (46), was found to be 0.96 in this study and the Bartlett Sphericity test was significant for both Mother (χ^2=9914.355, sd=276, p<0.001) and Father (χ^2=10691.309, sd=276, p<0.001) Forms. As a result of EFA, two factors for the Mother Form (acceptance and rejection) and three factors for the Father Form (acceptance, rejection, and neglect) were found. In both forms, all items in the warmth/affection subscale and item 13 in the indifference/neglect subscale ("paid a lot of attention to me") took place in the acceptance subscale in this analysis. Items in hostility/aggression, indifference/neglect, and undifferentiated rejection subscales of the Mother Form gathered under a single factor named rejection. Unlike Mother Form a third factor emerged in the Father Form; hostility/aggression and undifferentiated rejection subscales gathered under rejection factor, indifference/neglect subscale items gathered under a separate factor named neglect. The two factors in the Mother Form accounted for 56.87%

of the total variance and the three factors in the Father Form accounted for 62.72% of the total variance.

Verification of the factor structures obtained from EFA was evaluated with two CFA's conducted separately for Mother and Father Forms. Analyzes were performed using the IBM SPSS AMOS 21 package software. In the evaluation of CFA, path diagram, fit indices (χ^2, χ^2/sd, GFI, AGFI, CFI and RMSEA) and modification indices were taken into consideration. As seen in Table 1, the two-factor structure found for the Mother Form was confirmed by CFA. The model was found to have acceptable fit values (χ^2[246, N=685]=746.07, χ^2/sd=3.03, GFI=0.91, AGFI=0.89, CFI=0.95, RMSEA=0.05). Similar findings were obtained for the Father Form as well and it was found that the 3-factor structure had acceptable fit values (χ^2[244, N=685]=848.69, χ^2/sd =3.48, GFI=0.90, AGFI=0.88, CFI=0.94, RMSEA=0.06).

Since there is difference between the factors found by EFA and the factors considered by Rohner (39,40), in order to determine which factor structure has better exploratory power, model comparisons were made with CFA for each form separately. In these comparisons, in addition to the factors found in current study, Rohner's 1 factor (acceptance factor containing entire 24 items in one dimension), 2-factor (acceptance and rejection) and 4-factor (warmth/affection, hostility/aggression, indifference/neglect and undifferentiated rejection) models took part. Besides, revised 2-factor and 4-factor models, which were made up of by loading the item 13 to warmth/affection factor instead of the indifference/neglect factor in the original form, were also included in the comparison. Based on the modification indices, error variances of the items in the same factor were correlated; and five correlations have been made for each model. The differences between the models were evaluated in terms of χ^2 difference tests, CFI difference values and AIC values (40,47).

As shown in Table 1, 1-factor models neither in Mother nor in Father Form had acceptable fit index values. There were significant differences between revised and un-revised 2 and 4-factor structures in terms of fit indices. According to this finding, the revised 2-factor and 4-factor models obtained by

Table 1: Comparative confirmatory factor analysis results of Adult PARQ/S Mother and Father Forms

	χ^2/SD	GFI	AGFI	CFI	RMSEA	AIC	$\chi^{2\text{dif}}$	SD$^{\text{dif}}$	CFI$^{\text{dif}}$
Mother Form									
1-Factor	7.80	0.75	0.70	0.83	0.10	2032.27			
2-Factor	4.49	0.88	0.86	0.91	0.07	1212.93			
2-Factor/R	3.03	0.91	0.89	0.95	0.05	854.07			
4-Factor	4.17	0.89	0.87	0.92	0.07	1123.79			
4-Factor/R	2.70	0.92	0.91	0.96	0.05	768.53			
2-Factor vs 2-Factor/R							358.86*	-	0.04
4-Factor vs 4-Factor/R							355.26*	-	0.04
1-Factor vs 2-Factor/R							1180.20*	1	0.12
1-Factor vs 4-Factor/R							1275.74*	6	0.13
2-Factor/R vs 4-Factor/R							95.54*	5	0.01
Father Form									
1-Factor	14.02	0.54	0.44	0.70	0.14	3570.06			
2-Factor	6.52	0.84	0.80	0.87	0.09	1713.21			
3-Factor	3.48	0.90	0.88	0.94	0.06	960.69			
4-Factor	5.23	0.87	0.84	0.90	0.08	1378.72			
4-Factor /R	3.49	0.91	0.88	0.94	0.06	959.71			
4-Factor vs 4-Factor/R							419.01*	-	0.04
1-Factor vs 2-Factor							1858.85*	1	0.17
1-Factor vs 3-Factor							2615.37*	3	0.24
1-Factor vs 4-Factor/R							2622.35*	6	0.24
2-Factor vs 3-Factor							756.52*	2	0.07
2-Factor vs 4-Factor/R							763.50*	5	0.07
3-Factor vs 4-Factor/R							6.98	3	0.00

GFI: Goodness-of-fit index, AGFI: Adjusted goodness-of-fit index, CFI: Comparative fit index, RMSEA: Root mean square error of approximation, AIC: Akaike's Information Criterion, Factor: Original factor structure, Factor/R: Revised factor structure by displacing item 13, *p<0.001

loading the item 13 to the warmth/affection factor have better fit values than the models considered by Rohner (39). However, the revised 4-factor models were found to be better fit indices for both Mother (χ^2[241, N=685]=650.53, χ^2/sd=2.70, GFI=0.92, AGFI=0.91, CFI=0.96, RMSEA=0.05, AIC=768.53) and Father Forms (χ^2[241, N=685]=841.71, χ^2/sd=3.49, GFI=0.91, AGFI=0.88, CFI=0.94, RMSEA=0.06, AIC=959.71). The items loaded on to the revised 4-factor models and factor loadings are shown in Table 2.

b) Criterion-related Validity

In order to determine the criterion-related validity of the scale, correlations between the total and subscale scores of the Mother and Father Forms and the total and subscale scores of the PBI were evaluated. Significant correlations were found between the total scores of adult PARQ/S Mother Form and mother PBI at -0.76 (p<0.01), and between the total scores of adult PARQ/S Father Form and the father PBI at -0.83 (p<0.01).

Significant correlations were also found between the adult PARQ/S Mother and Father Forms' subscales and PBI Mother Care/Control, Over-Protection and Father Care/Control, Over-Protection subscales, ranging from -0.21 (p<0.01) to 0.89 (p<0.01) (Table 3).

c) Discriminant Validity

In order to determine the discriminant validity of the adult PARQ/S Mother and Father Forms, the total scores of the PBI Mother and Father Forms were categorized into 3 groups as low, moderate and high bonding (low 0-25 points, moderate 26-50 points and high bonding 51-75 points) and discriminant analysis was performed. In the second phase of the study which was conducted with 201 participants, 5 subjects (2.5%) had low level of bonding, 71 subjects (35.3%) had moderate bonding and 125 people (62.2%) had high bonding, based on the mean PBI Mother Form scores. For the PBI Father Form, these values were; low level of bonding in 11 subjects (5.5%), moderate bonding in 86 subjects (42.8%), and high bonding in

Table 2: Factor loadings of Adult PARQ/S Mother and Father Forms

	Mother Form				Father Form			
	I	II	III	IV	I	II	III	IV
1. …said nice things about me.	0.73				0.77			
3. …made it easy for me to tell him/her things that were important to me.	0.70				0.75			
9. ...was really interested in what I did.	0.80				0.82			
12. …made me feel wanted and needed.	0.78				0.84			
13. …paid a lot of attention to me.	0.78				0.84			
17. …made me feel what I did was important.	0.77				0.86			
19. …cared about what I thought and liked me to talk about it.	0.75				0.82			
22. …let me know s/he loved me.	0.72				0.78			
24. …was warm and softhearted to me.	0.77				0.74			
4. …hit me, even when I did not deserve it.		0.70				0.74		
6. …punished me severely when s/he was angry.		0.58				0.65		
10. …said many unkind things to me.		0.85				0.81		
14. … went out of her/his way to hurt my feelings.		0.66				0.70		
18. …frightened or threatened me when I did something wrong.		0.65				0.65		
20. …felt other children were better than I was no matter what I did.		0.72				0.67		
2. …paid no attention to me.			0.70				0.68	
7. …was too busy to answer my questions.			0.70				0.73	
11. …paid no attention when I asked for help.			0.77				0.74	
15. … forgot important things I thought s/he should remember.			0.59				0.54	
23. …paid no attention to me as long as I did nothing to bother him/her.			0.75				0.74	
5. …saw me as a big nuisance.				0.78				0.82
8. …seemed to dislike me.				0.79				0.79
16. …made me feel unloved if I misbehaved.				0.75				0.72
21. …let me know I was not wanted.				0.78				0.78

PARQ/S: Parental Acceptance – Rejection Questionnaire Short Version, Factor I: Warmth/Affection, Factor II: Hostility/Aggression, Factor III: Indifference/Neglect, Factor IV: Undifferentiated Rejection

Table 3: Correlations between Adult PARQ/S mother and father subscale and total scores and PBI subscale and total scores

	Mother PBI			Father PBI		
	Mother PBI	Care/Control	Over-protection	Father PBI	Care/Control	Over-protection
Mother PARQ	-0.76**	-0.82**	-0.15*	-0.48**	-0.49**	-0.04
Warmth/Affection	0.71**	0.79**	0.08	0.45**	0.48**	0.01
Hostility/Aggression	-0.62**	-0.64**	-0.21**	-0.44**	-0.44**	-0.07
Indifference/Neglect	-0.62**	-0.68**	-0.11	-0.27**	-0.29**	-0.01
Undifferentiated Rejection	-0.54**	-0.57**	-0.14	-0.37**	-0.37**	-0.05
Father PARQ	-0.41**	-0.44**	-0.09	-0.83**	-0.89**	0.03
Warmth/Affection	0.37**	0.40**	0.06	0.81**	0.89**	-0.1
Hostility/Aggression	-0.39**	-0.40**	-0.13	-0.68**	-0.69**	-0.09
Indifference/Neglect	-0.34**	-0.37**	-0.06	-0.72**	-0.78**	0.04
Undifferentiated Rejection	-0.36**	-0.37**	-0.10	-0.66**	-0.69**	-0.03

PARQ/S: Parental Acceptance – Rejection Questionnaire Short Version,
Mother PARQ: Parental Acceptance – Rejection Questionnaire Mother form total score, Father PARQ: Parental Acceptance – Rejection Questionnaire Father Form total score,
Mother PBI: Parental Bonding Instrument Mother Form total score, Father PBI: Parental Bonding Instrument Father Form total score, **p<0.01, *p<0.05

104 subjects (51.7%). In the discriminant analysis, subscales of Adult PARQ/S Mother and Father Forms were taken as predictive variables, and bonding groups categorized as low, moderate and high were taken as predicted variables.

The discriminant analysis conducted for the adult PARQ/S Mother Form revealed two discriminant functions. The model accounts for 57% of the dependent variance. The first function (eigenvalue=1.04) accounts for 93.9% of the dependent

Table 4: Correct classification rates of participants

| | Predicted Groups (Adult PARQ/S: Mother) | | | | | |
| Actual Groups | Low bonding | | Moderate bonding | | High bonding | |
	n	%	n	%	n	%
Low bonding (n=5)	5	100	0	0	0	0
Moderate bonding (n=71)	3	4.2	37	52.1	31	43.7
High bonding (n=125)	0	0	8	6.4	117	93.6
	Predicted Groups (Adult PARQ/S: Father)					
Low bonding (n=11)	9	81.8	2	18.2	0	0
Moderate bonding (n=86)	9	10.5	51	59.3	26	30.2
High bonding (n=104)	0	0	11	10.6	93	89.4

PARQ/S: Parental Acceptance – Rejection Questionnaire Short Form

Table 5: Internal consistency, test-retest coefficients and item-total score correlation intervals of Adult PARQ/S Mother and Father Forms total scores and subscales

	Item	Internal Consistency Coefficient	Test-Retest Coefficient (n=64)	Item-Total Score Correlation Interval
Mother PARQ	24	0.92	0.78*	0.45* - 0.74*
Warmth/Affection	9	0.88	0.83*	0.58* - 0.80*
Hostility/Aggression	6	0.79	0.75*	0.62* - 0.80*
Indifference/Neglect	5	0.77	0.61*	0.69* - 0.78*
Undifferentiated Rejection	4	0.75	0.40*	0.69* - 0.82*
Father PARQ	24	0.96	0.95*	0.50* - 0.83*
Warmth/Affection	9	0.95	0.96*	0.76* - 0.92*
Hostility/Aggression	6	0.86	0.87*	0.63* - 0.86*
Indifference/Neglect	5	0.85	0.87*	0.73* - 0.82*
Undifferentiated Rejection	4	0.88	0.86*	0.83* - 0.89*

PARQ/S: Parental Acceptance – Rejection Questionnaire Short Form,*p<0.01

variance and the groups were significantly differentiated (Wilks' Lambda=0.46, sd=8, p<0.001). The second function accounted for 6.1% of the variance (eigenvalue=0.07) and significantly differentiated the groups (Wilks' Lambda=0.94, sd=3, p<0.01). In differentiating the three groups, the standardized canonical discriminant function coefficients demonstrating the significance of the independent variables were found as: warmth/affection (-0.50 for the first function, 0.28 for the second function), hostility/aggression (0.45 for the first function, 0.22 for the second function), indifference/neglect (0.58 for the first function, 0.78 for the second function), and undifferentiated rejection (-0.28 for the first function and -1.16 for the second function). Classification findings following the calculation of the prior probability values of the groups showed that 79.1% of the participants were correctly classified. This value is higher than the highest prior probability value of 51%. As seen in Table 4, within the three groups the highest correct classification rate belongs to the low bonding group with 100% rate (prior probability 2.5%). This was followed by the high bonding group with a rate of 93.6% (62.2% prior probability) and the moderate bonding group with 52.1% (prior probability 35.3%).

Two discriminant functions were found as a result of discriminant analysis carried out for the adult PARQ/S Father Form. The model accounted for 71% of the dependent variance. The first function (Wilks' Lambda=0.36, sd=8, p<0.001), which differentiated the groups significantly, accounted for 92.2% of the dependent variance (eigenvalue=1.50). The second function (Wilks' Lambda=0.89, sd=3, p<0.001) significantly differentiates the groups and accounted for 7.8% of the independent variance (eigenvalue=0.13).

Standardized canonical discriminant first and second function coefficients were found to be -0.52 and 0.79 for warmth/affection, 0.47 and -0.07 for hostility/aggression, 0.21 and -0.17 for indifference/neglect, and 0.08 and 1.12 for undifferentiated rejection. Classification findings showed that 76.1% of the participants were correctly classified. This value is higher than the highest prior probability value of 45%. As shown in Table 4, the highest correct classification among the three groups belongs to the high bonding group with 89.4% (prior probability 51.7%). This is followed by the low bonding group (81.8%) (with a prior probability of 5.5%) and the moderate bonding group with 59.3% (prior probability 42.8%).

II. Reliability Findings

In order to evaluate the reliability of the scale, Cronbach alpha internal consistency coefficients, test-retest reliability coefficients, item total correlations and split half reliability were calculated for all scales and subscales. As shown in Table 5, the internal consistency coefficients of the adult PARQ/S Mother Form ranged from 0.75 to 0.92, the test-retest reliability coefficients ranged from 0.40 to 0.83, and the item total correlation ranged from 0.45 to 0.82. The internal consistency coefficients of the Father Form ranged from 0.85 to 0.96, the test-retest reliability coefficients ranged from 0.86 to 0.96, and the item total correlation ranged from 0.50 to 0.92. In addition, the split half reliability of the Mother Form was 0.88 and the split half reliability of the Father Form was 0.94.

DISCUSSION

The aim of this study is to evaluate the factor structure and psychometric characteristics of the two forms (Mother and Father) of Adult PARQ/S in Turkey. The findings of EFA and CFA, that were conducted to determine the construct validity of the scale, are consistent with similar studies. More specifically, findings of EFA in this study revealed 2-factor structure for the Mother Form (acceptance and rejection) and 3-factor structure (acceptance, rejection and neglect)

for the Father Form. Although all versions of the PARQ have been proposed as a 4-factor model, all the studies, including the first study carried out in 1975, confirmed the two factor structure, called as acceptance and rejection (38,49-51). In this study, the 2-factor structure obtained for the Mother Form showed consistency with previous studies; items of warmth/affection subscale were loaded on acceptance factor and items of hostility/aggression, indifference/neglect, and undifferentiated rejection subscales were loaded onto the rejection factor. In the Father Form, in contrast to the Mother Form, the neglect items of the original form diverged from the rejection factor and gathered under a third factor. It has been determined that in EFA only item 13 ("paid a lot of attention to me") was loaded into the warmth/affection factor instead of indifference/neglect, and the rest of the items took place under the factors mentioned in the original form. The loading of this item onto the warmth/affection factor also emerged in the adaptation work carried out by Gomez and Suhami (43), and the authors have commented this finding as gathering of the positive items under the warmth/affection factor.

The factors obtained with EFA in the study were confirmed with CFA. In order to have an acceptable model in CFA, the χ^2 value should be non-significant, the GFI, AGFI and CFI values should be above 0.90 and the RMSEA value should be below 0.08 (48,57). However, χ^2 is affected by sample size, and the probability of rejecting the model increases as the sample size increased (58). For this reason, it is suggested to use χ^2/sd instead of χ^2 in analyzes where the sample is large, and it is stated that a value below 5 indicates that the model is acceptable (59). In addition, an AGFI above 0.85 is also considered as an acceptable value (60). In the current study, it was found that 2-factor model for Mother and 3-factor model for Father Forms, obtained with EFA, have acceptable fit index values.

In recent years, studies (40-43) investigating the validity and reliability of various forms of PARQ have tended to assess the validity of the scale with CFA instead of EFA. Gomez and Rohner (47) explained the reason for this tendency as the fact that EFA classified items by categorizing, and thus assessing the factor

structures underlying the item scores. The authors pointed out unlike EFA, CFA aims to verify the validity of the models that describe the relationship between observed scores and latent factors, and evaluates the items individually. In this context, they pointed out that CFA could be used for PARQ scales, which have been theoretically proposed as 4-factor structure. Based on these views, in this study we tried to determine the best model by comparing factor structures obtained by EFA with 1-factor, 2-factor, and 4-factor models similar to the original study (40). Model comparisons included revised models obtained by loading the item 13 on the warmth/affection factor. The significance of the differences between the models was assessed by chi-square difference test and AIC values. Models with lower AIC values indicate better fit than those with higher AIC values (47). Accordingly, the model with the best fit index values for both Mother and Father Form is the revised 4-factor model. This finding is consistent with the adaptation study conducted by Gomez and Suhami (43); the authors noted that the model obtained by displacing item 13, is the model with the best fit values. In studies conducted with CFA on other forms of PARQ, it has been found that 4-factor models have better fit index values than 1- and 2-factor models (40-43).

Correlation analyzes conducted to determine the criterion-related validity of adult PARQ/S revealed significant and expected relationship between the factors of the Mother and Father Form and PBI's care dimension expressing a warm, understanding, and accepting parental perception. This finding provides evidence for the criterion-related validity of the scale. Discriminant validity findings showed that Adult PARQ/S Mother and Father Forms can distinguish low, moderate and high bonding groups significantly. More precisely, the rejection by the parents perceived by the low-bonding group is higher, whereas the acceptance by both parents, perceived by participants in the high-bonding group, is higher.

Reliability analyzes of the scale show that the Cronbach alpha internal consistency coefficients of scales and subscales of both forms ranged from 0.75 to 0.96. This finding suggests that the Adult PARQ/S has a high level of internal consistency. Item total scale correlations ranged from 0.45 to 0.92, which is higher than the desired values of 0.20 or 0.30 (61,62). The split half reliability of the scale was 0.88 for the Mother Form and 0.94 for the Father Form. Finally, test-retest reliability coefficients for both forms ranged from 0.40 to 0.96. With all these findings, it can be said that the revised 4-factor Adult PARQ/S Mother and Father Forms are valid and reliable tools in the Turkish sample.

There are some limitations of our study. The majority of participants are college students and women. When evaluating the findings, it is necessary to take these characteristics of the sample into consideration. Despite the limitations, this study is important in terms of providing a valid and reliable scale that can be used in clinical practice and in scientific research in Turkey to assess the acceptance/rejection of adults perceived by their parents in their childhood.

Contribution Categories	Name of Author
Development of study idea	M.D., E.A., A.D.B.
Methodological design of the study	A.D.B.
Data acquisition and process	M.D.
Data analysis and interpretation	M.D., E.A., A.D.B.
Literature review	M.D., E.A.
Manuscript writing	E.A., M.D.
Manuscript review and revisation	M.D., E.A., A.D.B.

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