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# A Turkish Adaptation of the Inventory of Parent and Peer Attachment: The Reliability and Validity Study

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## Abstract

*Problem Statement:* Adolescent attachment with their parents has been explicitly considered in many studies, and a vast number of studies provide empirical evidence for the link between parental attachment and psychological well-being and adjustment in adolescence. Adolescents explore close and supportive relationships outside of their immediate family in this period, and attachment behavior is often directed beyond parental figures. Attachment theory provides a theoretical underpinning about the link between parent and child attachment style with peer-group functions and relationships. Therefore, in the current study, psychometric properties of the Inventory of Parent and Peer Attachment were examined in a sample of subjects in middle adolescence (aged between 14 and 18 years).

*Purpose of the Study:* The study aimed to examine the psychometric properties of the Inventory of Parent and Peer Attachment developed by Armsden and Greenberg, Turkish version (IPPA-T), with a sample of subjects in middle adolescence (aged between 14 and 18 years).

*Methods:* In the study, the reliability and validity of a three-dimension model of adolescents' attachment to mother, father and peer were examined. In order to determine how well the identified model of the original version of the IPPA fits the Turkish adaptation of IPPA (IPPA-T), a Confirmatory Factor Analysis (CFA) and Exploratory Factor Analysis (EFA) were performed to understand the factor structure of IPPA-T. 315 high school students from Ankara, Turkey, participated in the study. Test-retest reliability was conducted using a Pearson product-moment

correlation coefficient over a two-week interval. Finally, the validity analysis was conducted by correlating the total and subscale of IPPA-T scores with Positive and Negative Affect Scale and Self-Esteem Scale.

*Findings and Results:* The results of the initial confirmatory factor analyses suggested that the original factor structure of the IPPA does not fit the data for adolescents' ratings of mothers, fathers and peer on the measures. The exploratory factor analyses revealed a new three-factor structure for IPPA with a shortened scale. The second confirmatory factor analyses demonstrated that the new three-factor model provides an acceptable fit.

*Conclusions and Recommendations:* It was concluded that the IPPA-T constitutes a useful tool for the assessment of both parent and peer attachment in adolescents aged between 14 and 18 years. The findings of the current study provide a good starting point for further attachment instruments in the Turkish culture.

*Keywords:* Adolescence, attachment, parents, peer, validation.

Bowlby's (1969) attachment theory has provided a theoretical point of view on the strong affective bond established between infants and the primary caregivers. The basic premise of attachment theory is that the quality of the attachment relationship stems from the interaction between infants and their caregivers, particularly the degree to which they can rely on attachment figures for security and support. Caregivers (especially mothers) who are sensitive and consistently responsive to their infant's needs are likely to foster secure attachment in their children. As a result of the early attachment experience with caregivers, individuals construct an internal working model of themselves, other and relationship that they use to guide their expectations in subsequent close relationships (Bowlby, 1988). Therefore, individuals' experience with the availability of attachment figures in their lives shape their feelings of security and trust in others.

Over the years, in line with Bowlby's framework, many researchers have conceptualized attachment as a life span construct (Bartholomew, 1993; Rice, 1990), and have claimed that children maintain attachments bonds to their parents across childhood and into adolescence. Reflecting the increased recognition of the importance of attachment across a person's life span, the research into the attachment relationship between parents and adolescents in a peer context is increasingly being conducted. Consistent with Bowlby's attachment theory, various instruments or self-report measures of attachment have been developed and carried out to assess attachment in adolescence. Perhaps the most cited instrument for attachment is the "Inventory of Parent and Peer Attachment" (IPPA), developed by Armsden and Greenberg (1987). IPPA is a self-report measure of attachment, and it measures psychological security derived from relationships with a subject's mother, father and close friends in three subscales (Communication, Trust and Alienation). It has been ascertained to have adequate internal consistency, test-retest reliability, and acceptable convergent validity in Western culture (Armsden & Greenberg, 1987; Gullone & Rabinson, 2005).

It is not surprising that methods and measures for studying attachment have attracted the attention of many researchers from diverse cultures (Raja, McGee, & Stanton, 1992; Vignoli & Mallet, 2004). Equally, it is not surprising that several researchers have tried to translate and adapt IPPA for the Turkish context, as previously there were no adequate, psychometrically sound and valid instruments for measuring the attachment of adolescents in Turkish culture. The first study using IPPA was conducted by Hortaçsu, Oral and Yasak-Gültekin (1991) to investigate the relationship between Turkish late adolescents and their parents and peers in a sample of undergraduate students between the ages of 16 and 20 ( $M=20.26$  years). The item analysis and factor analysis were done with three separate varimax rotations, and the items were grouped by three factors, as Armsden and Greenberg (1987) pointed out in their study. Although the items of each subscale were not reported, the authors suggested that factor loadings were mostly similar for mother and father attachment items, and that three common subscales were obtained for fathers and mothers by selecting items with values greater than .30 on both analyses. Three additional scales were also constructed from attachment items for friends. The three scales, labeled "Trust," "Communication" and "Alienation," were constructed for subjects' mothers, fathers, and friends. The internal consistency coefficient for each subscale ranged from .68 to .90. However, the authors provided no data about test-retest reliability or other types of validity.

In addition to the study mentioned above, IPPA was employed to investigate the differential effect of parental and peer attachment on social and emotional loneliness among adolescents (Löker, 1999). A factor analysis with maximum likelihood revealed five factors accounting for 46 % variance; however, the factor solution in the current study did not fit the original scale factor solution. Although a high internal consistency estimate was found in the Löker study ( $\alpha = .92$ ), the factors were not differentiated, the total score was thus used to measure both parental and peer attachment, and the reliability coefficient alpha for the two scales was .92. A further study was also carried out by Günaydın, Selçuk, Sümer and Uysal (2005) to examine the psychometric quality of IPPA using reliability and validity test techniques. The researchers employed the short form of the IPPA developed by Raja, McGee and Stanton (1992) to evaluate the attachment to mother and father. The results showed that three factors of IPPA (Communication, Trust, and Alienation) did not construct for the Turkish late adolescents, although the mother and father total scales each had high internal consistency and reliability, .88 and .90 respectively.

As a result, the previous adaptation studies of IPPA reported that established factor structure and loadings did not construct for the IPPA (Günaydın, Selçuk, Sümer, & Uysal, 2005; Löker, 1999) and provided no data about the test-retest reliability and any types of validity (Hortaçsu, Oral, & Yasak-Gültekin, 1991) in a sample of the Turkish late adolescents. However, the findings of the previous studies do not necessarily exclude the possibility that IPPA needs to be improved and enhanced to more effectively measure the adolescent attachment script to mother, father, and peers. A vast number of studies (Çolakkadıoğlu & Gürçay, 2007; Eren Gümüş, 2010) were carried out to examine the scales to develop valid and reliable measurements for Turkish adolescents, because of the lack of instruments specifically developed and validated for Turkish adolescents. Therefore, the present study

suggests comprehensive statistical approaches to examine the psychometric properties of IPPA.

The first aim of the present study was to explore the psychometric properties of IPPA adapted for Turkish middle-adolescents (IPPA-T) by using comprehensive statistical procedures and providing data about the reliability and validity of IPPA-T. In addition, many studies (e.g. Lieberman, Doyle, & Markiewicz, 1999; Wilkinson, 2004) suggested that the attachment behavior of adolescents could not be assessed by a single dimension, and that the father and mother attachment behavior system for adolescents should be considered separately. This suggestion was the second aim of the present study, which was to examine the psychometric properties of attachment to mother (MA), father (FA) and close friends (PA) in a sample of middle adolescence by using the revised version of IPPA (25 items for each scale). In order to determine the psychometric properties of the IPPA, the exploratory and confirmatory factor analyses were carried out and the factor structure and internal consistency of IPPA were analyzed. Next, the test-retest reliability was conducted using Pearson product moment correlation. Finally, the correlations between the IPPA and self-esteem (Rosenberg Self Esteem Scale-RSS) and psychological well-being (Positive and Negative Affective Scale-PANAS) were analyzed to determine the convergent validity of the IPPA.

## Method

### *Research Design*

Initially, in order to determine how well the identified model of the original version of the IPPA would fit the Turkish adaptation of IPPA (IPPA-T), a Confirmatory Factor Analysis (CFA) was performed on the variance-covariance matrix using Lisrel 8.3 (Joreskog & Sörbom, 2003). CFA allowed for determining whether the factor structure of the Turkish version of IPPA was comparable to the factor structure of the original version of the IPPA (Zero Model,  $M_0$ ). If the original factor structure did not fit the data for the IPPA-T, an Exploratory Factor Analysis (EFA) with principal component analysis would be performed to understand the factor structure of the IPPA-T. After that, based on the results of EFA, the second CFA would be carried out to determine whether the IPPA-T new factor structure would fit the data (Alternative model,  $M_1$ ). For this analysis, the goodness-of-fit statistics were tested with  $\chi^2$  (a non-significant value that corresponds to an acceptable fit). Because  $\chi^2$  are known to increase with sample size and degree of freedom, the use of four indices is commonly suggested; (a) Standardized Root Mean Square Residual (S-RMR) < .08, (b) Root Mean Square Residual of Approximation (RMSEA) < .06, (c) Goodness-of-Fit Index (GFI) > .90, (d) Adjusted Goodness-of-Fit Index (AGFI) > .85, and e) Comparative Fit Index (CFI) > .90 (Hu & Bentler, 1999; Şimşek, 2006). In addition, Expected Cross-Validation Index (ECVI) and Model AIC, assumed to be more acceptable for lower fits (Joreskog & Sörbom, 1993), were also reported to allow comparison of zero with the alternative measurement model.

## Participants

399 high school students from Ankara, Turkey, were asked to participate in the study during the 2007-2008 academic years. 84 participants were excluded from the study because of their incomplete answers. The results were analyzed for the remaining 315 participants (147 male, 168 female) aged between 14 and 18 years ( $M=16.06$ ,  $SD=1.02$ ).

## Research Instruments

*Inventory of parent and peer attachment (IPPA; Armsden & Greenberg, 1987)*. IPPA derives from the theoretical assumption of attachment theory, and assesses the positive and negative dimensions of adolescents' relationships with their parents and close friends. Specifically, the IPPA was developed in order to assess adolescents' perceptions of the positive and negative affective/cognitive dimension of relationships with their parents and close friends -- particularly how well these figures serve as sources of psychological security. The items in the original version of the IPPA, in a sample of college students aged between 16 and 20, demonstrated good internal consistency and were clustered into three factors through principal components analysis, namely "Communication", "Trust", and "Alienation" (Armsden & Greenberg, 1987).

All three scales (father, mother, and peers) consisted of 25 items and were translated into Turkish prior to administering the study. Two bilingual Turkish scholars independently translated each item, and compared their translations to resolve any disagreements. From this translation, a Turkish-English bilingual supervisor translated it back into English. The discrepancies emerging from this back-translation were discussed, and the adjustments to the Turkish translation of the IPPA were made.

*Rosenberg self-esteem scale (RSS; Rosenberg, 1965)*. RSS is a ten-item self-report scale developed by Rosenberg (1965) for the purpose of measuring adolescent's global self-esteem. The scale has ten items formulated to assess the appraisal of individual. Five of the items are phrased positively, and other five items are negatively. The Turkish adaptation of RSS was established by Çuhadaroğlu (1986) through psychometric interviews with ninth, tenth and eleventh grade secondary school students, and the results revealed strong reliability validity properties in the middle adolescence sample.

*Positive and negative affect scales (PANAS; Watson, Clark, & Tellegen, 1988)*. PANAS, developed by Watson, Clark, and Tellegen (1988), is a ten-item brief measure of affective evaluation of life with two dimensions. Positive affect (PA) reflects the extent to which a person feels enthusiastic, active, and alert. In contrast, "Negative Affect (NA) is a general dimension of subjective distress and unpleasurable engagement that subsumes a variety of aversive mood states, including anger, contempt, disgust, guilt, fear, and nervousness, with low NA being a state of calmness and serenity. The adaptation of the scale to Turkish was made by Gençöz (2000). Consistent with the original study, the result of the factor analysis revealed two factors accounting for the 44% of the total variance.

## Findings and Results

### Factor Structure

Initial Confirmatory Factor Analysis (CFA) with the maximum likelihood method was performed on the variance-covariance matrix in order to test whether the original version of the IPPA-T fitted the data. In the first model (Zero Model,  $M_0$ ), it was assumed that all items of IPPA-T were constructed in the same factors as in the original version of IPPA. The results revealed that the original factor structure of the IPPA-T indicated a poor fit of the data. The RMSEA and S-RMR were higher than the cutoff value for an acceptable level, and the GFI, AGFI and CFI were below .90, indicating a poor fit of the zero model ( $M_0$ ). Indeed, the results suggested that original factor structures of the IPPA-T showed poor goodness-of-fit-statistics for mother, father, and close friends or peers (Table 1).

**Table 1**

*Fit Indices of Confirmatory Factor Analyses*

Models	$\chi^2$	df	SRMR	RMSEA	GFI	AGFI	CFI	ECVI	Model AIC
<b>Mother</b>									
Zero Model ( $M_0$ )	628.79*	272	.064	.065	.86	.84	.89	2.34	734
Alternative Model	282.86*	132	.055	.060	.91	.88	.94	1.15	360
<b>Father</b>									
Zero Model	730.12*	272	.088	.073	.84	.81	.89	2.66	836
Alternative Model	335.88*	132	.072	.070	.89	.86	.93	1.09	412
<b>Peer</b>									
Zero Model	743.11*	272	.070	.074	.84	.81	.87	2.70	849
Alternative Model ( $M_1$ )	275.07*	132	.053	.059	.91	.89	.93	1.12	353

\* $p < .01$

*Exploratory Factor Analysis:* Because of a poor fit of the zero model ( $M_0$ ), a principal components factor analysis with an oblimin rotation was conducted to further understand the factor structure of the IPPA-T. The factor solution was determined using the scree plot method. In addition, it was decided that the factors extracted would only comprise items with a factor load greater than .35.

For the mother attachment (MA) scale, the results showed that the factor solution for the 19 items were grouped into three factors, and 6 items (6, 9, 10, 13, 17, 23) were eliminated due to their low factor load (<.35). For the father attachment (FA) scale, a factor analysis was computed to the oblimin rotation. The eigenvalues were greater than one, suggesting that the 24 items were grouped into three factors. One item (4) was eliminated because it displayed a low factor load (<.35). On the peer attachment (PA) scale, the factor solution was mostly similar to the father attachment items, and the factor solution composed of 24 items was grouped into three factors. One item (6) was eliminated as it displayed a low factor loading (<.35).

In order to achieve a parallel form between the mother, father and peer attachment scales, and thus to provide an assessment of the relationship between father, mother, and peers, some items in each scale, which had a factor loading lower than .45 on the expected factors, were eliminated. Therefore, one item (4) from the mother dimension, six items (6, 9, 10, 13, 17, 18) from the father dimension, and six items (2, 5, 7, 8, 9, 21) from the peer dimension were excluded. Consequently, 18 items for attachment to mother, father and peers were determined, and three separate factor analyses were performed for each (Table 2).

**Table 2**

*Loadings of the Exploratory Factor Analysis*

Items		Factor 1	Factor 2	Factor 3
	<i>Mother</i>	1	2	3
19	My mother helps me to talk about my difficulties.	.85	-.25	.05
20	My mother understands me.	.81	-.34	.27
12	When we discuss things, my mother cares about my point of view.	.79	-.07	.27
1	My mother respects my feelings.	.77	-.13	.27
24	I can count on my mother when I need to get something off my chest.	.76	-.30	.14
15	My mother helps me to understand myself better.	.75	-.30	.08
21	When I am angry about something, my mother tries to be understanding.	.72	-.24	.11
5	I like to get my mother's point of view on things I'm concerned about.	.63	-.16	.18
16	I tell my mother about my problems and troubles.	.62	-.51	-.01
25	If my mother knows something is bothering me, she asks me about it.	.60	-.12	.24

7	My mother can tell when I'm upset about something.	.50	-.11	.33
2	I feel my mother does a good job as my mother.	.28	.66	-.18
3	I wish I had a different mother.	-.12	-.66	.10
22	I trust my mother.	.30	.53	-.05
14	My mother has her own problems, so I don't bother her with mine.	-.08	-.23	-.76
11	I get upset a lot more than my mother knows about.	-.21	-.15	-.67
8	Talking over my problems with my mother makes me feel ashamed or foolish	-.27	.16	-.59
18	I don't get much attention from my mother.	-.10	-.25	-.58
<i>Father</i>				
19	My father helps me to talk about my difficulties	.87	.14	-.23
25	If my father knows something is bothering me, he asks me about it.	.85	.23	.07
15	My father helps me to understand myself better.	.82	.27	.17
7	My father can tell when I'm upset about something.	.77	.28	.13
21	When I am angry about something, my father tries to be understanding	.74	.10	.31
1	My father respects my feelings.	.74	.37	.18
24	I can count on my father when I need to get something off my chest.	.73	.07	-.34
16	I tell my father about my problems and troubles	.72	.26	.13
20	My father understands me.	.71	.42	-.26
5	I like to get my father's point of view on things I'm concerned about.	.61	.41	.08
12	When we discuss things, my father cares about my point of view.	.60	.42	.19
2	I feel my father does a good job as my father	.30	.78	-.03
3	I wish I had a different father.	.12	-.70	.09
22	I trust my father.	.28	.60	-.01
8	Talking over my problems with my father makes me feel ashamed or foolish	-.24	.07	-.71
14	My father has his own problems, so I don't bother him with mine.	.09	.10	-.66
11	I get upset a lot more than my father knows about.	.09	-.48	-.60
23	My father doesn't understand what I'm going through these days.	-.24	-.34	-.56
<i>Peers</i>				
17	My friends care about how I am feeling.	.78	.30	.22
3	When we discuss things, my friends care about my point of view.	.73	.23	.18

16	My friends help me to understand myself better.	.72	.41	-.01
15	When I am angry about something, my friends try to be understanding.	.71	.26	.19
14	My friends are fairly easy to talk to.	.68	.12	.26
20	I trust my friends.	.18	.83	.36
19	I can count on my friends when I need to get something off my chest.	.13	.80	.26
24	I can tell my friends about my problems and troubles.	.34	.76	.22
25	If my friends know something is bothering me, they ask me about it.	.35	.73	.14
1	I like to get my friend's point of view on things I'm concerned about.	.23	.70	.08
13	I feel my friends are good friends.	.20	.70	.45
12	My friends listen to what I have to say.	.34	.56	.11
22	I get upset a lot more than my friends know about.	-.01	-.20	-.77
18	I feel angry with my friends.	.02	.19	-.67
23	It seems as if my friends are irritated with me for no reason.	-.03	-.31	-.66
10	My friends don't understand what I'm going through these days.	-.28	-.02	-.65
11	I feel alone or apart when I am with my friends.	-.15	.03	-.61
4	Talking over my problems with friends makes me feel ashamed or foolish.	-.09	-.21	-.45

In the mother attachment, a three factor solution accounting for 54.50 % of the total variance was found. The first factor eigenvalue of the principal component analysis was 7.43 and accounted for 41.80 % of the variance and included eleven items (1, 5, 7, 12, 15, 16, 19, 20, 21, 24, 25). The second factor was grouped by the three items (2, 3, 22) and the eigenvalue of the principal component analysis was 1.20, which accounted for 6.07 % of the variance. The third factor eigenvalue of the principal component analysis was 1.28, accounted for 6.63 % of the variance and included four items (8, 11, 14, 18).

For the father attachment (FA) scale, the eigenvalues were greater than one, suggesting that the 18 items grouped themselves into three factors (eigenvalues for factor1= 8.20, factor2= 1.31, factor3= 1.40) with each factor accounting for a comparable amount of variance (45.56 %, 7.25 %, 7.74 %, respectively, in total accounting for 60.57 % of the variance). The first factor was characterized by eleven items (1, 5, 7, 12, 15, 16, 19, 20, 21, 24, 25). The second factor comprised three items (2, 3, 22) and the third factor included four items (8, 11, 14, 23).

In peer attachment, the factor solution was composed of 18 items constructed in three factors that accounted for 51.77 % of the variance. The first factor (eigenvalue= 1.45) accounted for 6.39 % of the variance and included five (3, 14, 15, 16, 17) items. The second factor (eigenvalue=8.50) was grouped by the seven items (1, 12, 13, 19, 20, 24, 25) and accounted for 36.13% of the variance. The last and the third factor

(eigenvalue=1.67) was composed of six items (4, 10, 11, 18, 22, 23) and accounted for 9.24 % of the variance.

The results of the principal components factor analysis revealed that three factor structures relating to adolescents' attachment to mother, father and peers were found. In other words, the oblimin rotation results pointed out that a three factor structure (Communication, Trust and Alienation) was obtained again for mother, father and peer attachment as shown in Armsden and Greenberg's study. The exploratory factor analysis results also showed that a shortened version of the IPPA was more appropriate for middle adolescents in Turkey.

Furthermore, the process of deciding the number of factors was carried out with a parallel analysis, a commonly used method that compares the size of the eigenvalues with those produced by a randomly generated data set (Horn, 1965). The results of parallel analysis also supported the retention of three factors in three dimensions (father, mother and peer). The eigenvalues of all of the three factors in each three dimensions exceeded the criterion values produced from the random data matrix of the same size (315X18 items) while the fourth factor, with an eigenvalue of 1.01, accounted for 5% of the variance, which reflected in an elbow formed at the fourth factor in the peer dimension. The further details of the eigenvalues generated from the principal axis and the criterion values obtained from parallel analysis are demonstrated in Table 3.

**Table 3**

*A comparison of Eigenvalues from the Principal Axis factor Analysis and the Corresponding Criterion Values Obtained from the Parallel Analysis*

Mother				
Component number	Actual eigenvalue	Criterion Value from PA	Value	Decision
1	7.43	1.40		Accept
2	1.20	1.007		Accept
3	1.28	1.26		Accept
Father				
Component number	Actual eigenvalue	Criterion Value from PA	Value	Decision
1	8.20	1.42		Accept
2	1.31	1.28		Accept
3	1.40	1.34		Accept
Peer				

Component number	Actual eigenvalue	Criterion Value from PA	Decision
1	1.45	1.34	Accept
2	8.50	1.45	Accept
3	1.67	1.43	Accept
4	1.014	1.285	Reject

*Confirmatory Factor Analysis:* In line with the statistical analysis strategy, a second confirmatory factor analysis (Alternative Model,  $M_1$ ) was conducted to determine whether the new factor structure, based on the results of exploratory factor analysis, would fit the data for the population in this study. The results showed that the  $\chi^2$  value of the Alternative Model ( $M_1$ ) was significant for mother attachment (MA) [ $\chi^2_{(132)}=282.86, p<.01$ ], father attachment [ $\chi^2_{(132)}=335.88, p<.01$ ], and peer attachment scales [ $\chi^2_{(132)}=275.07, p<.01$ ]. However, other goodness-of-fit statistics of the Alternative Model ( $M_1$ ) for each scale indicated a better fit to the data for IPPA-T than the Zero Models ( $M_0$ ). The  $\chi^2$  value/degree of freedom ratio for the Alternative Model was slightly above 2, but this ratio was considered as acceptable by Jöreskog and Sörbom (1993). For other fit indices, better goodness-of-fit statistics were found for the Alternative Model ( $M_1$ ) with more acceptable values for GFI (>.90), AGFI (>.85), S-RMR (<.080), CFI (>.90) and RMSEA (<.060) in mother, father and peer attachment scales, except RMSEA (>.060) and GFI (<.90) in father attachment. Furthermore, the values of ECVI and Model AIC were more acceptable for the alternative model that was lower than the zero model for adolescents' attachment to mother, father and peers (Table 1).

In addition, in order to test whether the alternative model would be replicated in an independent sample, the alternative model was examined in an independent sample ( $N=226, M=15.35; SD=.85$ ). In the mother dimension, the results of goodness of fit statistics were:  $\chi^2_{(132)}=274.28, p<.01, S-RMR=.056, RMSEA=.069, CFI=.91, AGFI=.85, and GFI=.88$ . In the father dimension, goodness of fit statistics were;  $\chi^2_{(132)}=318.17, p<.01, S-RMR=.047, RMSEA=.079, CFI=.92, GFI=.86, and AGFI=.82$ . Lastly in the peer dimension, goodness of fit statistics were;  $\chi^2_{(132)}=282.44, p<.01; S-RMR=.055, RMSEA=.071, CFI=.92, GFI=.88, and AGFI=.84$ . The results suggested that fit indices were also acceptable in an independent sample.

### Reliability

*Internal Consistency:* The Cronbach' Alpha ( $\alpha$ ) internal consistencies were .91 for total mother attachment, .92 for Communication, .63 for Trust, and .62 for Alienation. The Cronbach' Alpha ( $\alpha$ ) internal consistencies were .92 for total father attachment, .93 for Communication, .69. for Trust, and .66 for Alienation scale. The last Cronbach' Alpha ( $\alpha$ ) internal consistencies were .89 for total peer attachment, .80 for Communication, .85 for Trust, and .71 for the Alienation scale.

The results also revealed that each of the total IPPA-T scores highly correlated with their respective sub-scale scores. The total attachment to mother score was

correlated with .97, .62, and .73 for Communication, Trust, and Alienation, respectively. The total attachment to father was correlated with .97, .81, and .72 for Communication, Trust, and Alienation, respectively. The total attachment to peers was correlated with .84, .88, and .78 for Communication, Trust, and Alienation, respectively. Furthermore, as expected, the intercorrelations between subscales, within the scale (mother, father, and peer), were moderately high. Communication and Trust subscales were positively correlated with  $r=.54$ ,  $.77$ , and  $.67$  for mother, father and peer scales, respectively. In addition, the Alienation subscale was negatively correlated with Communication ( $r=-.56$ ) and Trust ( $r=-.33$ ) for attachment to mother, with  $r=-.56$  and  $-.46$  for father, and  $r=-.47$  and  $-.50$  for peers, respectively.

*Test-Retest Reliability:* Test-retest reliability was conducted using Pearson product-moment correlation coefficient over a two-week interval. The sample of the test-retest reliability study consisted of 77 adolescents ( $M=15.35$ ,  $SD=.85$ ) aged between 14 and 17. The result of the Pearson's product-moment correlation coefficient revealed that test-retest reliability was high in the mother and father subscale, but moderate in the peer subscale. In the mother subscale, Person's product-moment correlation was .73 for total mother attachment (MA), .72 for Communication, .34 for Trust, and .50 for Alienation. In the father subscale, Person's product-moment correlation was .81 for total father attachment (FA), .81 for Communication, .65 for Trust, and .63 for Alienation. Lastly, in the peer subscale, test-retest reliability was .55 for total peer attachment (PA), .51 for Communication, .53 for Trust and .46 for Alienation.

### *Validity*

*Convergent Validity with Self-Esteem and Well-Being:* Validity analysis was conducted by correlating the total and subscale of IPPA-T scores with Positive and Negative Affect Scale (PANAS) and Rosenberg Self-Esteem Scale (RSS). The convergent validity method was used to determine whether the total score, Communication and Trust subscale scores of IPPA-T correlated significantly and positively with the RSS and PANAS positive well-being (PA) subscale score. In addition, a significant correlation was expected negatively with the PANAS negative well-being (NA) subscale scores. Conversely, it was expected that Alienation subscale scores correlated negatively with RSS and PANAS positive well-being (PA) subscale scores, but positively with the PANAS negative well-being (NA) subscale scores. The instruments were completed over four weeks and the voluntary nature of the adolescents' participation ( $N=282$ ,  $M=16.01$ ,  $SD=1.04$ ) was clearly stated prior to administering the instruments.

The findings revealed that the total scores and Communication and Trust subscale scores of mother attachment and father attachment were positively correlated to the positive affect (PA) and RSS. In addition, the total scores of mother attachment and father attachment, and Communication and Trust subscale scores, were negatively correlated to the negative affect (NA). As expected, the Alienation subscale of two attachments (father and mother) was negatively correlated to PA and RSS, and positively correlated to NA.

In the peer attachment scale, the total score of peer attachment, Communication and Trust subscale scores were positively correlated to PA and RSS. Contrary to the expectations, while the total score of peer attachment negatively correlated to NA,

the Communication and Trust subscale did not correlate to NA. The Alienation subscale was negatively correlated to PA and RSS, and positively correlated to NA, as expected (Table 4).

**Table 4**

*Correlations of the IPPA-T with PANAS and SE Measures*

	Positive Affect	Negative Affect	Self-Esteem
Mother (Total score)	.39**	-.36**	.45**
Communication	.38**	-.32**	.40**
Trust	.36**	-.25**	.30**
Alienation	-.20**	.35**	-.42**
Father (Total score)	.36**	-.37**	.40**
Communication	.34**	-.30**	.34**
Trust	.30**	-.36**	.30**
Alienation	-.26**	.40**	-.40**
Peer (Total score)	.25**	-.13*	.27**
Communication	.22**	-.06 <sup>a</sup>	.22**
Trust	.19**	-.03 <sup>a</sup>	.16**
Alienation	-.23**	.27**	-.35**

\*\* Correlations are significant at  $p < .01$ , \* Correlations are significant at  $p < .05$ ,

<sup>a</sup> "a" Correlations are insignificant

### Conclusions and Recommendations

The results of the EFA and CFA revealed that the three factor structures (Trust, Communication, and Alienation), with 18 items for mother, father and peer attachment scales, were most likely replicated with Turkish middle age adolescents. The results also showed that the acceptable level of internal consistency was obtained for the new three-factor structure (18 items) and the total score of the IPPA-T. Test-retest reliability was moderately strong among the subscales and total score of the IPPA-T, and the results consistently agreed with the theoretical framework with respect to convergent validity.

The overall findings of the present study were in line with other adaptation studies of IPPA into diverse cultures. For instance, Vignoli and Mallet (2004), in France, found a clear and expected three-dimension model (Communication, Trust, and Alienation) for attachment to father, whereas no meaningful internal structure for parental attachment to mother was found. After the CFA and EFA studies, the authors applied a brief questionnaire for attachment to the mother with a three-dimension model (14 items) which could be considered as a reliable and valid measure of parental attachment for French late adolescents.

In addition, the results of the present study showed that the IPPA-T was a sound tool for the assessment of attachment in middle adolescents aged from 14 to 18, and this finding is in line with the studies that supported the validity of the IPPA construct for adolescent attachment to father and mother involving different age groups of adolescents. For instance, Gallone and Robinson (2004) conducted a study with different age groups (children and adolescents) to examine the revised version of IPPA. The authors found out that the revised IPPA was a sound tool for the assessment of attachment in children and adolescents aged from 9 to 15.

To summarize, although some of the items on the original scale were reduced, IPPA-T could be assumed to assess the same multidimensional constructs in the attachment relationship to father, mother and peers as proposed by Armsden and Greenberg (1987), and IPPA-T is a sound tool for the assessment of attachment in middle adolescents of ages 14 to 18 in the Turkish culture. The findings of the current study provided a good starting point for further IPPA development in the Turkish culture. In other words, further studies might try to devise and revise several new items to increase internal consistency of the IPPA-T, particularly the trust subscale, which consisted of only three items.

These findings should be considered within the context of the study's limitations. First of all, the sample of the current study was limited to middle adolescents, and the results may not be generalizable to samples of different ages. The second limitation of the study is that the small sample size was conducted using convergent validity analysis with PA, NA and RSS. This finding can be considered tentative and needs to be replicated. Another limitation of the study concerns reliability; meaning that the two-week measure period was too short to evaluate test-retest reliability, and evaluation would have needed to be extended over longer time intervals.

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## Anne-Baba ve Akran Bağlanması Envanterinin Türkçe Uyarlaması: Güvenirlilik ve Geçerlik Çalışması

### (Özet)

*Problem Durumu:* Bowlby yaşamın ilk yıllarında annenin/bakıcının çocuğa verdiği tepkilere bağlı olarak, çocuğun kendisine ve başkalarına ilişkin zihinsel modeller oluşturduğunu ve bu zihinsel modellerin daha sonraki yıllarda, yakın kişiler arası ilişkiler için bir rehber ve model görevi gördüğünü belirtmektedir.

Yaşamın ilk aylarından itibaren bebek ile temel bakıcı (anne) arasında gelişen bağlanma örüntüsünün, hem çocuklukta hem de yetişkinliğe geçişte bireyin ruh sağlığı ile ilişkisini ortaya koyan araştırmalar dikkat çekmektedir. Son yıllarda ergen ve yetişkin ilişkilerinde bağlanmanın rolünü inceleyen araştırma bulguları; yaşamın ilk yıllarında annenin çocuğa verdiği tepkilere bağlı olarak çocuğun kendisine ve başkalarına ilişkin modeller oluşturduğunu, daha sonraki yıllarda da bu modellerin yakın kişiler arası ilişkiler için rehber görevi gördüğünü ortaya koymaktadır. Bağlanmanın yaşam boyu devam eden bir süreç olarak değerlendirilmesiyle birlikte anne-babanın ve akran gruplarına bağlanmanın ergenler üzerindeki etkilerine yönelik çalışmalarda son yıllarda artış gözlenmektedir. Bu ilginin bir sonucu olarak Bowlby'nin görüşleri ile tutarlı olarak, ergenlik döneminde bağlanma sürecinin değerlendirilmesi amacıyla bir çok ölçme aracı geliştirilmiştir. Bağlanma kuramı ile çalışmalarını sürdüren araştırmacıların bu ölçme araçları içerisinde belki de en çok ele aldıkları ölçme aracı Armsden ve Greenberg tarafından geliştirilen Anne-Baba ve Akran Bağlanması Envanteri'dir (ABABE). Ölçme aracının bir çok farklı dile ve kültüre uyarlandığı görülmektedir. ABABE'nin Türk kültürüne uyarlama çalışmalarının gerçekleştirilmiş olması da şaşırtıcı değildir. Yapılan çalışmalar geç ergenlik dönemi (late adolescence) örneklemleri üzerinde gerçekleştirilmiştir. Bu çalışmalardan bazılarında Armsden ve Greenberg'in belirttiği faktör yapılarının ayrıştığı görülmüş ancak çalışma sonuçlarında test-tekrar test ve geçerlilik çalışmaları rapor edilmemiştir. Diğer çalışmalarda ise faktör yapılarının ayrışmadığı sonucu bildirilmiştir. Genel olarak bakıldığında, uyarlama çalışmaları sonucunda ABABE'nin Türkiye'de bağlanma alan yazınında ve araştırmalarında kullanılabilir bir ölçme aracı olabileceği düşünülmektedir. Bu çalışmada ise ABABE'nin orta-ergenlik dönemi (middle-adolescent) örneklemleri üzerinde güvenirlilik ve geçerlik çalışmaları incelenmiştir.

*Araştırmanın Amacı:* Bu çalışmanın amacı, orta yaş ergenler (middle-aged adolescents) üzerinde ABABE'nin psikometrik özelliklerini belirlemektir. Bir diğer amaç ise, ergenler üzerindeki farklı etkileri bulunan anne ve babanın birlikte ele alınması yerine, yabancı yazın alanının da belirtildiği

gibi anne ve baba bağlanmasını ayırarak değerlendirmektedir. Böylelikle, ABABE'nin orta-ergenlik dönemindeki gençlerin, anne-baba ve akran ilişkilerinde güvenli bağlanma duygularını belirlemek amacıyla kullanılabilecek bir ölçme aracı olabileceğini göstermek çalışmanın genel amacıdır.

*Araştırmanın Yöntemi:* Çalışmaya, yaşları 14 ve 18 arasında değişen, Ankara'da orta öğrenimlerine Anadolu Lisesi ve Normal Lisede devam eden 315 öğrenci katılmıştır. ABABE'nin uyarılma çalışmasında kapsamlı ölçme yöntemleri üç farklı aşamada gerçekleştirilmiştir. Birinci aşamada, faktör yapıları ve iç tutarlılık katsayıları incelenmiştir. İkinci aşamada test-tekrar test ilişkisi ve üçüncü aşamada ise ölçüt bağıntılı geçerliliği incelemek amacıyla ABABA'nin benlik saygısı ve iyi oluş ile ilişkisi test edilmiştir. Çalışmada kullanılan ölçme araçları, Anne-Baba ve Akran Bağlanması Envanteri, Benlik Saygısı Ölçeği ve Olumlu ve Olumsuz Duygu Ölçeği'dir. Açıklayıcı faktör analizi, temel bileşenler faktör analizi yöntemi ile incelenmiş ayrıca ölçme modelinin kabul edilebilir uyum iyiliği istatistikleri (goodness of fit statistics) üretip üretmediğini test etmek amacıyla doğrulayıcı (confirmatory) faktör analizi kullanılmıştır. Uyum iyiliği istatistikleri, herhangi bir modelin bir bütün olarak veri tarafından kabul edilebilir bir düzeyde desteklenip desteklenmediğine karar verme olanağı tanımaktadır. Yaygın olarak bilinen uyum istatistiği Kay-kare'dir ( $\chi^2$ ) ve bir modelin anlamlı olarak kabul edilebilmesi için  $\chi^2$  değerinin anlamlı çıkmaması beklenir. Ancak  $\chi^2$  değeri örneklem büyüklüğüne duyarlı olduğu için bir çok farklı uyum istatistiği üretilmiştir. Bunlar arasında en yaygın olarak kullanılanlar; Uyum İyiliği İndeksi (Goodness Of Fit Index, GFI), Düzeltilmiş Uyum İyiliği İndeksi (Adjusted Goodness Of Fit Index, AGFI), Karşılaştırmalı Uyum İyiliği İndeksi (Comparative Fit Index, CFI), Yaklaşık Hataların Ortalama Karekökü (Root Mean Square Error of Approximation, RMSEA) ve Standart Ortalama Hataların Karekökü (Standardized Root Mean Square Residual, SRMR) olduğu görülmektedir

*Araştırmanın Bulguları:* Yapılan ilk doğrulayıcı faktör analizi sonuçları, ABABE'nin orijinal yapısının (Zero Model  $M_0$ ) ürettiği uyum iyiliği değerlerinin kabul edilebilir değerlerin altında olduğunu göstermektedir. Analiz stratejisi gereği, ABABE'nin faktör yapılarını belirlemek amacıyla yapılan açıklayıcı faktör analizi sonuçları, anne, baba ve akran bağlanmasında üç faktörlü bir yapının olduğunu ortaya koymaktadır. Ancak her bir alt boyutta, annede 19, babada 24 ve akran'da 24 olmak üzere farklı madde sayıları gözlenmiştir. ABABE'nin üç alt boyutunu karşılaştırma olanağı sağlamak ve boyutlar arasında bir paralel form oluşturmak için anne, baba ve akran boyutunda, 45'in altında faktör yükü olan maddeler boyutlardan çıkarılmıştır. Sonuçta her üç boyutta (anne, baba ve akran), 18 maddeden oluşan kısa bir form elde edilmiştir. Ortaya çıkan bu yeni formun ölçme modelinin, uyum iyiliği değerleri ikinci doğrulayıcı faktör analizi ile test edilmiştir (Alternative Model,  $M_1$ ). İkinci

doğrulayıcı faktör analizi sonuçları, uyum iyiliği değerlerinin kabul edilebilir düzeyde olduğunu göstermektedir. Bunun yanı sıra, ortaya çıkan yeni kısa form, bağımsız bir örneklem üzerinde test edilmiş, sonuçlar uyum iyiliği değerlerinin aynı şekilde kabul edilebilir düzeyde olduğunu ortaya koymuştur. İkinci aşamada gerçekleştirilen test-tekrar test sonuçları, anne ve baba toplam puanlar ilişkisinin yüksek olduğunu göstermektedir. Buna karşın akran bağlanması toplam puanları ve alt ölçekleri ile anne ve baba bağlanması alt ölçekleri test-tekrar test ilişkisinin orta düzeyde olduğu görülmektedir. Üçüncü ve son aşamada ise, ABABE'nin Benlik Saygısı ve Olumlu-Olumsuz Duygu Ölçeği ile ilişkisi ölçüt bağıntılı geçerlik olarak incelenmiştir. Sonuçlar, ABABE'nin Benlik saygısı ve olumlu duygu ile olumlu yönde, olumsuz duygu ile olumsuz yönde bir ilişki gösterdiğini ortaya koymaktadır.

*Araştırmanın Sonuçları ve Öneriler:* Genel olarak, çalışmanın ilk bulguları, ABABE'nin orijinal yapısının, orta yaş ergenler için kullanılabilir bir ölçme aracı olmadığını ortaya koymuştur. Ancak bir sonraki analizler sonucunda ortaya çıkan 18 maddelik yeni kısa formun bu yaş ergen gruplar da anne, baba ve akran bağlanmasını değerlendirmeye yönelik bir ölçme aracı olduğunu göstermektedir. ABABE'nin yeni kısa formunun, orta öğrenimlerine devam eden orta yaş ergenlerin, anne-baba ve akranlarına bağlanma duygularını değerlendirmeye yönelik araştırmalarda kullanılabilecek bir ölçme aracı olduğu görülmektedir. Bu çalışmanın sonuçlarının, Türkiye'de bağlanma kuramı ile sonraki süreçte gerçekleştirilecek çalışmalara ve geliştirilebilecek ölçme araçlarına kaynaklık edebileceği düşünülebilir.

*Anahtar Sözcükler:* Ergenlik, bağlanma, anne-baba, akran, geçerlilik