

## Original Article

# Validation of the Persian version of Mothers' Object Relations Scales - Short Form (MORS-SF)

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### Abstract

Parent-child relationships are among the most critical variables influencing children's developmental process. The availability of suitable tools for screening and measuring changes in the process of psychological interventions is of great importance. Due to the lack of appropriate tools assessing parent-child relationships, the present study aims to validate the Mothers' object relations scale short-form (MORS-SF) in Iranian society. This descriptive research used a test construction method, according to which the questionnaire was published electronically through social media after its translation and content validation. The population consisted of all mothers with Persian-speaking children aged 2 to 4 living in Iran, of whom 181 respondents were voluntarily considered as the sample. The collected data was analyzed by SPSS.22 and AMOS software, and exploratory and confirmatory factor analyses were performed to check the data construct validity. Pearson's correlation test was used to examine the concurrent criterion validity between the data of MORS-SF and Pianta's Child-Parent Relationship, and Scale Cronbach's alpha was performed to determine the scale's internal reliability. The exploratory factor analysis (EFA) resulted in two factors, explaining 55.28% of the total variance. The correlation coefficients of 0.77 and 0.84 between the similar subscales of the two questionnaires and the coefficients of -0.730 and 0.652 between the inverse subscales, respectively, confirmed the scale's convergent and divergent criterion validity. Cronbach values of 0.85 and 0.83 were obtained for the first and second factors, respectively. According to the obtained data, the questionnaire translated in Iran has good validity and reliability and is a suitable tool to measure the mother-child relationship quality.

### Keywords

Object relations  
Parent-child relations  
Reliability  
Validity

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### Introduction

The parent-child relationship can be described as a distinctive and influential relationship, created in the parent-child interaction process and contributing to the child's future physical and mental growth (Zeigler-Hill et al., 2020). A prominent feature of this relationship is the matching of emotional states between parent and child, where mother and child imitate and figure out one another's emotional expressions (Bell, 2022). Studies have shown many factors such as the mother's education level (Huston & Rosenkrantz Aronson, 2005), family poverty, including income poverty and subjective poverty (Totsika et al., 2020), and parents' employment status (Lemmon et al., 2018, Roeters et al., 2010) significantly affect the parent-child relationship quality. The mental state of parents is also among the basic factors affecting

the quality of this relationship; for example, the parent's psychological distress reduces the relationship quality and increases the conflict in the relationship (Totsika et al., 2020, Zabidi et al., 2023). Besides, the time the parent devotes to the child doing enjoyable activities, reduces conflict and improves intimacy and quality of the parent-child relationship (Zabidi et al., 2023; Layland et al., 2020). Other factors influencing the child-parent relationship quality include warmth and parental sensitivity against resentment, hostility, and coercion, reducing conflict in the relationship and increasing intimacy (Laura et al., 2022). Studies have shown that the parent-child relationship quality significantly affects the child's physical health and mental well-being (King, 2015), enthusiasm and persistence in task accomplishment (Datu, 2017), learning motivation (Chen et al., 2018), adaptation, and academic preparation

(Anderson, 2018) and success (Toor, 2018). Furthermore, low child-parent relationship quality increases the child's externalization problems at older ages (Schuiringa et al., 2015) and delinquent behaviors in adolescence (Shannon et al., 2020). In addition, the quality of this interaction not only reduces anxiety in adolescents (Kearns & Bromario, 2014, Bradford et al., 2016) but also causes the formation of moral behaviors (Grusec et al., 2014), interactive skills (Malczyk & Lawson, 2017), and emotional and social development, affecting the child's romantic relationship quality in adulthood (Laura et al., 2022). Research has also confirmed the predicting role of the child-parent relationship quality in the stress experienced by both the child and the parent (Hickey et al., 2020, Tutsika et al., 2020) and its impact on the mental health of both (Lewallen and Neece, 2015, Rodas et al., 2016).

Because of its importance, various theories and approaches have analyzed parent-child relationship, based on which child pathology and treatment methods have been introduced. Object relations theory is one of these procedures, in which the term "objects" represents not an inanimate entity but significant others to whom an individual is related, including mother, father, or primary caregiver. In the mother-infant object relationship, the infant learns about itself and others by using the mother as a substitute ego or, more specifically, through the illusion that the mother's and his/her egos are fused, and these teachings form the child's identity (Brodie, 2019). Object relations theorists attach great importance to the role of the child's early interactions and especially the parent-child relationship in the personality formation and development. Bowlby (1973) emphasized the significance of the parent-child relationship and the necessity of experiencing a warm, intimate, and stable relationship with the mother or her surrogate for the child's mental health. Studies have also shown that the mother's failure to establish a warm, intimate, and sensitive relationship in the first year of life results in permanent behavioral problems in the child (Caspi et al., 2023). The child's primary motivational systems, such as love and aggression in the early days, arise from the child's nervous system, and object relations theorists believe that the evolution and growth of these motives would take place in internalized object relations. Hence, if harmful conditions prevail in the child's object relations, incorrect behavioral patterns will be created in the child, resulting in the incorrect development of motives (Kernberg, 2021). Also, conflicts in the child's object relationship create social incompetence, egocentrism, and insecure attachment, significantly affecting destructive behaviors such as addiction in the following years of the child's development (Naqipour et al., 2022). Thus, the parent-child relationship is vital for the child's peace and security, highlighting that positive relationships and the mother's responsiveness provide the grounds for the discovery and compromise of the child's norm (De Falco et al., 2014). In addition, research has shown that education based on the object relations approach can be effective in promoting the parent-child

relationship and dealing with the child's behavioral problems (Iqbali et al., 2015). Based on this approach and considering the significant influence of the parent-child relationship on the children's mental health, it seems necessary to have a tool to measure the quality of this relationship and then carry out the necessary treatment and interventions. Such a tool should also evaluate the effects of these interventions on the parent-child relationship and the changes in the quality of this relationship. The assessment of interventions to improve the health and quality of parent-child relationships depends on the criteria through which the relationship quality is quantified.

The MORS-SF scale was introduced in the 1990s to assess the early mother-child relationship (Oates, 1984). This scale is based on the theory of object relations, assuming the influence of the mother's perception of her child on the mother-child interaction quality and its significant impact on the child's health. The Mothers' object relations scale evaluates the mother's inner representation of her child in two dimensions: warmth and invasion. This scale includes 14 statements derived from its long form, which has 44 statements, designed on a Likert scale. This scale has been translated and validated in English (Simkiss et al., 2013; Oates, Gervai, 2019), Hindi/Indian (Bhopal et al., 2022), Arabic, Dutch, Russian, Hungarian, Polish, and Chinese and aims to characterize the parent-child relationship and to be short enough for easy application in surveys with large numbers and evaluation of interventions. This study aims to the MORS-SF scale. Among the standardized questionnaires, Pianta's parent-child relationship scale (1994) has been confirmed in Iran (Khorramabadi et al., 2009). Considering the lack of more scales to scrutinize the parent-child relationship in Iran and the significant contribution of this relationship to mental health and follow-up interventions, this study sought to standardize the Mothers' object relations scale short-form.

## Method

### Participants

The current descriptive research used a test construction method. The population consisted of mothers with children aged 2 to 4 living in Iran in 2023. Since EFA can be performed on a minimum of 10 people per item (Hair et al., 2019), and the ratio of the number of samples to the model's free parameters must be greater than 10 (Kyriazos, 2018) for confirmatory factor analysis (CFA), the minimum sample size of 140 was considered.

### Instrument

#### *Mothers' Object Relations Scales - Short Form (MORS-SF):*

MORS-SF contains 14 items, with each statement scored on a Likert scale (never = 0, seldom = 1, sometimes = 2, often = 3, mostly = 4, always = 5). The

warmth subscale measures the warmth of the relationship of the child with the mother and is scored by adding up the scores of the items 1, 3, 4, 6, 8, 11, and 13. The average score in this subscale is 29, while scores of <20 and <11 indicate the possibility of worry and moderate concerns for the relationship, respectively. The invasion subscale evaluates how the mother feels about being conflicted or unconsciously controlled by the baby and is scored by adding up the scores of items 2, 5, 7, 9, 10, 12, and 14. The average score in this subscale is 10. A score higher than 12 is a possibility of worry and a score higher than 17 indicates concern.

#### ***Pianta's parent-child relationship scale (CPRS):***

Pianta developed the CPRS scale for the first time in 1994, with 33 items evaluating parents' perception of their relationship with their children. CPRS was translated by Khorramabadi (2007), and experts evaluated its content validity (Khorramabadi et al., 2007). This scale includes areas of invasiveness (17 items), intimacy (10 items), dependence (6 items), and overall positive relationship (sum of all areas). Driscoll and Bianta (2011) found values of 0.75, 0.74, 0.69, and 0.80 for Cronbach's alphas of invasion, closeness, dependence, and overall positive relationship, respectively, while these values were 0.84, 0.69, 0.46 and 0.80, respectively, in the Persian translation of the scale (Abedi Shapourabadi et al., 2012). Invasiveness includes the negative aspects of the relationship, such as fighting, arguing, disobedience, and refusing restraint and unpredictability. Intimacy represents the extent of the parents' perceived warmth, emotions, and comfort in their relationship with their children. Dependence evaluates the degree of mother-child abnormal dependence, and overall positive relationship highlights close and intimate parent-child relationships. CPRS is a self-report questionnaire scored based on a 5-point Likert scale (5= definitely applicable and 0 = definitely not applicable). In this research, the conflict factor was represented by questions 2, 3, 4, 7, 12, 14, 17, 19, 21, 23, 24, 25, 26, 27, 28, 31, 31, 33, and the proximity factor by questions 1, 5, 6, 8, 10, 13, 16, 29, and 30.

#### ***Procedure***

##### ***The scale translation process and content validity verification***

Correspondence with the authors of the English article was done and permission was given to access the scale and the scoring and interpretation method through the electronic website of the scale. Then, the translation and

cultural adaptation of the scale's English version into Persian was carried out according to the published instructions (Afrasiabi Far et al., 2007) and the international evaluation standard contract, which includes translation steps, translation quality assessment, backward translation, and comparing the English and Persian versions (Abdollahipour et al., 2016). Two Persian translators translated the original version into Persian (forward translation), after which the translation was sent to a third translator and scored. Then the translation of the final version was provided with the approval of all three translators. Two independent and blind translators performed the backward translation, which was matched with the English version and confirmed as the final translation. The prepared scale was filled by four psychologists and four mothers to check content validity and evaluate the comprehensibility of the questions. All participants at this stage reported that the scale was comprehensible, so its conceptual validity was established.

Then, the ultimate version of the questionnaire translation was designed in a virtual form and published on social networks. The inclusion criteria were having a child aged 2 to 4, reading literacy (minimum diploma), Persian as the mother tongue, and being a parent. Children suffering from a specific disease and adopted children were excluded from the study.

#### ***Data analysis***

Analyses were conducted using SPSS-22 and AMOS software. Kolmogorov-Smirnov tests were conducted for the data normality evaluation. After examining the scale's construct validity with the EFA test in the Varimax rotation method, the data obtained from the EFA were confirmed utilizing CFA. To check the test validity, the concurrent criterion validity method was followed, utilizing the parent-child relationship test (CPRS) simultaneously with the translated scale. Cronbach's alpha was utilized to evaluate the scale's reliability coefficient.

#### ***Results***

181 people filled out the questionnaire, and all of them were mothers. 88 of these people had female children and 93 had male children. Also, 29 people had 2-year-old children, 86 people had 3-year-old children, and 66 people had 4-year-old children. The average age of the children was 3.2 and the standard deviation was 1.20.

**Table 1.** Descriptive measures of the mean, SD, skewness, and kurtosis of the object relations scale items

Items	Kurtosis	Skewness	SD	Mean
1. My child smiles at me	-0.84	0.17	1.27	<b>2.65</b>
2. My child annoys me	-1.01	-0.06	1.22	<b>2.37</b>
3. My child likes doing things with me	-0.64	0.34	1.29	<b>3.20</b>
4. My child talks to me	-0.44	0.20	1.16	<b>2.77</b>
5. My child irritates me	-1.05	-0.07	1.35	<b>2.64</b>
6. My child likes me	-0.78	0.33	1.21	<b>3.46</b>

7. My child wants too much attention	-0.62	-0.38	1.20	<b>3.48</b>
8. My child laughs	-0.25	0.27	1.05	<b>2.90</b>
9. My child gets moody	-1.26	-0.08	1.42	<b>2.71</b>
10. My child dominates me	-0.41	-0.70	1.44	<b>2.22</b>
11. My child like to please me	-0.282	0.13	1.10	<b>2.98</b>
12. My child cries for no clear reason	-1.15	-0.19	1.47	<b>2.91</b>
13. My child is affectionate towards me	-0.73	0.18	1.13	<b>3.01</b>
14. My child winds me up	-1.24	0.08	1.34	<b>2.36</b>

Table 1 presents the mean, SD, skewness, and kurtosis of the scale's items. The SD of the items of the object relations measurement tool was in the range of 1.05 to 1.45. The results from skewness statistics and kurtosis showed that none of the scale's items exceeded the suggested cutoff points for skewness and kurtosis statistics equal to  $|3|$  and  $|8|$ , respectively. Thus, in line with Klein's (2015) suggested logic, each item in the translated version met the univariate normality assumption.

Factor validity was examined by EFA and CFA. The Kaiser-Meyer-Olkein (KMO) test a value of 0.889, confirming the sampling adequacy since the minimum value of this index to ensure the adequacy of the sample is 0.70 (Meers, Gamest, and Garino, 2016). Also, the

significant value of Bartlett's sphericity test ( $P < 0.001$ ,  $X^2(91) = 36.1218$ ) shows that there is a correlation between the items, and they have the possibility of being factored. The matrix of initial factor loadings was checked after undertaking the EFA. Varimax rotation was conducted for easier interpretation of factor loadings. The obtained results revealed two factors in this scale, which had an eigenvalue above one and could be extracted, explaining 35.351% and 19.929% of the variance, respectively. The two factors explain 55.281% of the total variance. It should be noted that the obtained factor structure was in line with the scale's English version. In the English version, the eigenvalue of two factors was also higher than one in the EFA, and the cumulative variance of these two factors was  $>45\%$ .

**Table 2.** Factor loadings extracted from EFA

items	Factor 1	Factor 2
1. My child smiles at me		<b>0.72</b>
2. My child annoys me	0.61	
3. My child likes doing things with me		<b>0.67</b>
4. My child talks to me		<b>0.69</b>
5. My child irritates me	0.68	
6. My child likes me		<b>0.50</b>
7. My child wants too much attention	0.83	
8. My child laughs		<b>0.56</b>
9. My child gets moody	0.80	
10. My child dominates me	0.68	
11. My child like to please me		<b>0.51</b>
12. My child cries for no clear reason	0.83	
13. My child is affectionate towards me		<b>0.60</b>
14. My child winds me up	0.67	

Table 2 shows the findings of EFA separately for each factor. The minimum acceptable factor loading for the items is a conservative value of 0.40 (Hair et al., 2019). The first factor includes items 2, 5, 7, 9, 10, 12, and 14, and the second factor includes items 1, 3, 4, 6, 8, 11,

and 13, which are completely similar to the English version of the questionnaire. In the English version, the first and second scales were named invasion and warmth, respectively.

**Table 3.** Model fit indices obtained from CFA

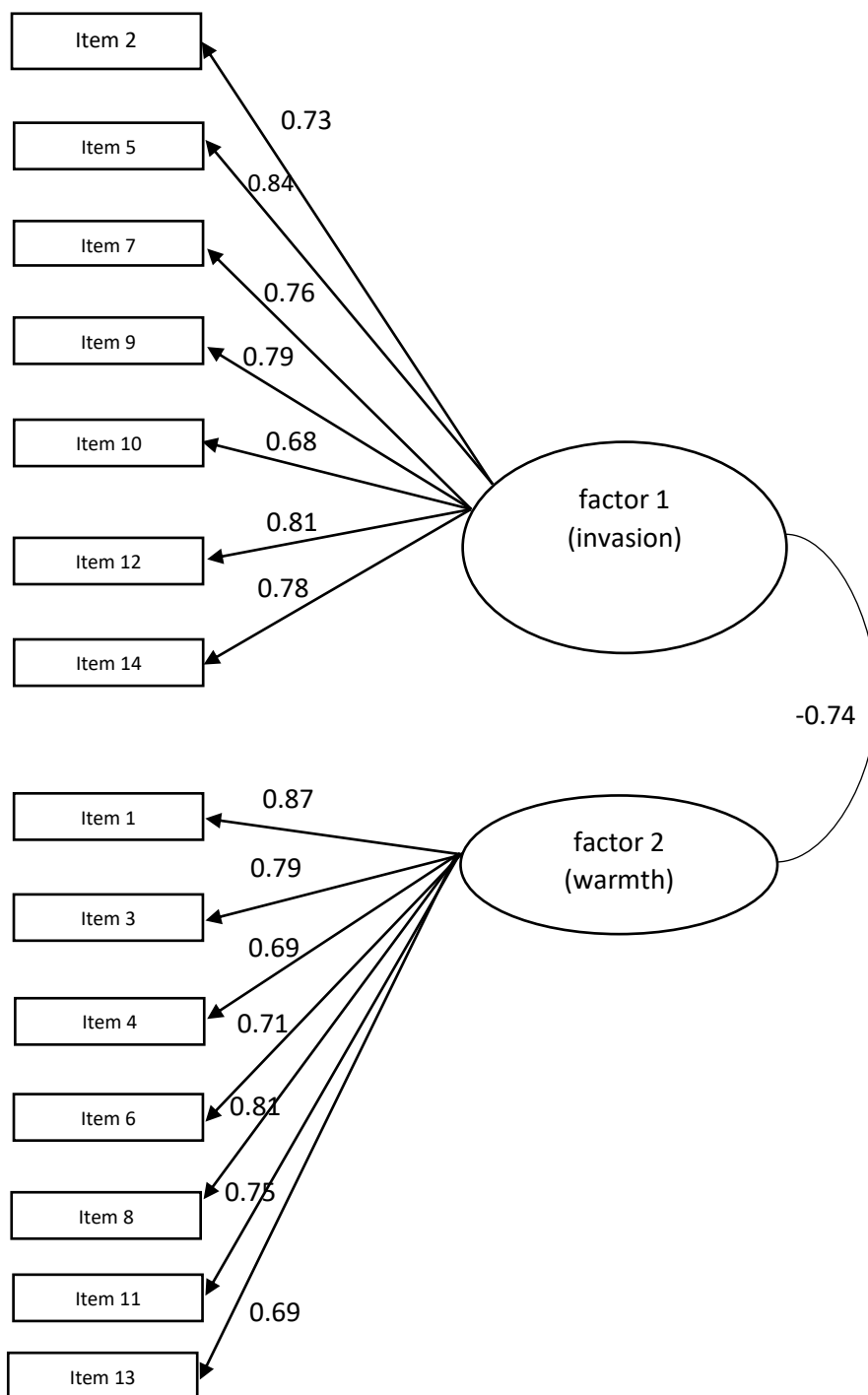
Indicator	NFI	CFI	GFI	AGFI	RMSEA	$X^2/df$
The value of the model	0.91	0.91	0.93	0.90	0.071	2.21
desired limit	$>0.90$	$>0.90$	$>0.90$	$>0.90$	$<0.08$	$<3$

In the continuation of the research, CFA was conducted to measure fit indices. Table 3 presents the fit indices obtained from CFA. As the results show, the fit indices were confirmed according to the optimal level mentioned in the table.

Also, Figure 1 indicates the standardized regression coefficients of items and factors, all of which were significant ( $p < 0.001$ ). A significant correlation

coefficient of  $-0.74$  was also found between the two factors ( $p < 0.001$ ).

The scale's internal consistency was examined utilizing Cronbach's alpha. Cronbach's alpha was higher than the optimal level of 0.7 by age and for all ages, confirming good reliability of the factors for all ages covered in the English version.



**Figure 1.** Confirmatory analysis of the two-factor structure extracted EFA

**Table 4.** Correlation of subscales of MORS-SF and CPRS

	Pearson correlation			
	MORS-SF warmth	MORS-SFinvasion	CPRS closeness	CPRS conflict
MORS-SF warmth	1	-0.736	0.776	<b>-0.738</b>
MORS-SF invasiveness	-0.736	1	-0.652	<b>0.84</b>
CPRS closeness	0.776	-0.652	1	<b>-0.691</b>
CPRS conflict	-0.738	0.840	-0.691	<b>1</b>

The CPRS and MORS-SF scales were conducted simultaneously to check the criterion validity (Table 4). First, the data were examined for normality with the Kolmogorov-Smirnov tests, the value of the MORS-SF warmth subscale was (0.200), the value of the MORS-

SF invasiveness subscale was (0.200), the value of the CPRS closeness subscale was (0.062), the value of the CPRS conflict subscale was (0.070). The results showed that all the data were normal. Following by investigating the correlation between the subscales of



both questionnaires. As shown in Table 4, the correlation of the warmth subscale of MORS-SF and the closeness subscale of CPRS was equal to 0.776, and the correlation of invasion subscale of MORS-SF and the conflict subscale of CPRS was equal to 0.84, confirming the scale's convergent validity. Also, the correlation between the warmth subscale of MORS-SF and the conflict subscale of CPRS was equal to -0.738, and the correlation between the invasion subscale of MORS-SF and the closeness subscale of CPRS was equal to -0.652, confirming divergent criterion validity.

## Discussion

This study sought to validate the Persian translation version of the MORS-SF scale. The EFA and CFA results highlighted that the two-factor structure for this questionnaire was desirable and verifiable. The structure obtained in the translated model of the Persian language matched the English (Otteo et al., 2019) and Indian versions (Bhopal et al., 2022) and consists of two factors. The first factor examined the conflicts between the mother and the child, and the second factor evaluated the warmth or intimacy of the mother-child relationship, which is also confirmed by Ekman's theory of fundamental emotions (1972). Anger and love are two of the six basic emotions that appear in the child's behavior and his/her relationship with the caregiver after birth. The research of Hada et al. (2022) is also in line with this theory and states that theoretical models of basic and conscious emotions can explain the emotions in the parent-child relationship. In this questionnaire, items such as "my child is grumpy", "my child cries without a specific reason", and "my child makes me angry" are the manifestations of the emotion of anger in the relationship between the child and the mother. For the warmth factor, items such as "my child smiles at me", "my child likes to do his work with me", "my child loves me", "my child is kind to me" can also indicate the excitement of love in the mother-child relationship. River et al. (2022) also showed that most languages of the world express the concepts of basic emotions in the same way, and there is no cultural difference in the expression of basic emotions. Therefore, the items translated into Farsi have correctly evaluated the same concepts that this questionnaire has in other languages. The negative correlation obtained between the two factors of warmth and conflict shows well that these two factors examine two separate concepts, but some participants received high scores in both factors at the same time, which is similar to the results found in the Indian version (Bhopal et al., 2022). These results do not indicate the incorrect functioning of the questionnaire, but despite the intimacy and warmth in the mother-child relationship, sometimes the mother feels that her child is closer to her than she wants (by answering questions such as: My child wants too much attention, my child dominates me). In their research, Bhopal et al. (2022) investigated the cases where mothers experienced high warmth and conflict in their relationship with their children at the same time. Their

results showed that mothers who were busy had to devote a lot of time to their work interactions considered the child's request for attention while working as annoying and felt conflicted (with an emphasis on phrases such as: my child annoys me, my child makes me angry, my child demands a lot of attention). The results of factor analysis and Cronbach's alpha also showed that all the items of this questionnaire had good reliability and validity in the Iranian society, and none of them were deleted, confirming the compatibility of all the questionnaire items with Persian culture. The items of this questionnaire evaluate non-verbal behaviors such as laughing, smiling, moodiness, and crying in the mother-child relationship, which agrees with the findings of research conducted by Itir Onal et al. (2023), stating that before the full development of speech, child communication depends on non-verbal behaviors; thus, it can be concluded that these items are a suitable indicator for examining the relationship between the ages of 2 and 4 years. Also, after checking the reliability of the questionnaire data considering the child's age, it can be concluded that the questionnaire is a suitable tool for measuring the mother-child relationship for children aged 2 to 4 years. The research data of Molsan (2020) also confirm that children from the age of one year onwards can express their feelings well in the relationship, enabling mothers of two-year-old children and older to figure out the expression of their children's feelings throughout the relationship and choose appropriate answers for the questionnaire items. Considering that a weak mother-child attachment can cause problems for the child's mental health (Vlierberghe et al., 2023), and childhood mental health complications are usually exacerbated in adolescence and may cause chronic mental problems in adulthood (Caspi et al., 2020), such a scale should be available to check the mother-child attachment quality at a young age. In the design of this questionnaire, it is assumed that the mother's perceptions of her relationship with the child has a great impact on her interactions with the child and the child's physical and mental health. The mother's perceptions of her relationship are based on the child's emotional and behavioral characteristics, which is also confirmed by the theory of the "internal work model" of attachment (Otteo et al., 2019). Bowman et al. (2022) showed how the processing of emotions and emotional stimuli of mothers could be related to the emotional characteristics of their children. Dela et al. (2021) also stated that the correct emotional recognition and emotional expression of primary caregivers of infants was related to children's emotional growth among toddlers so that toddlers of primary caregivers who were more emotionally expressive showed higher emotional understanding. Thus, it can be concluded that this questionnaire can help studies focusing on the improvement of children's health.

The current research had limitation, that the investigation is restricted only to the parent-mother relationship, and the answers of the fathers were not

evaluated. Future studies should focus on other caregivers, especially the father, and compare the results with the data collected from the mothers. Also, according to the English version of this questionnaire, the age range of 2 to 4 years has been selected for children; however, future research can evaluate the questionnaire and determine its efficiency for other ages as well.

## Conclusion

The current study revealed that the Maternal Object Relations Questionnaire, which is a tool for evaluating the relationship between a mother and a 2-4-year-old child, has a good psychometric performance and is easy to use because it is short. This questionnaire can be a suitable tool to check the quality of mother-child relationships, start interventions, and also check the effectiveness of interventions during and following treatment.

## Conflict of interest

No potential conflict of interest was reported by the author(s).

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## References

- Abedi Shapourabadi, S. Pourmohammed, M. Mohammadkhani, P., and Fadzi, M. (2011). Effectiveness of positive parenting group program on mother-child relationship in children with attention deficit/hyperactivity disorder. *Clinical Psychology*. 15(3): 62-73. doi: 10.22075/jcp.2017.2098.
- Anderson, RE. (2018). And still WE rise: Parent-child relationships, resilience, and school readiness in low-income urban Black families. *J Fam Psychol*. 2018 Feb;32(1):60-70. doi:10.1037/fam0000348
- Abdollahipour, F., Alizadeh Zarei, M., Akbar Fahimi, M., Karamali Esmaeili, S. (2016). Study of Face and Content Validity of the Persian Version of Behavior Rating Inventory of Executive Function, Preschool Version. *jrehab* 2016; 17 (1) :12-19. <http://rehabilitationj.uswr.ac.ir/article-1-1779-en.html>
- Afrasiabi Far, Ardeshir, Yaghmai, Farideh, Abdoli, Samere, and Abedsaeidi, Jila. (2007). The process of translating research questionnaires and their cultural adaptation. *Advances in Nursing and Midwifery*, 16(54), 58-67. SID. <https://sid.ir/paper/108126/fa>.
- Bell, M.A. (2020). Chapter Six—Mother-child behavioral and physiological synchrony. In: Benson, J.B., editor. *Advances in Child Development and Behavior*, Vol. 58, JAI,163–88. doi: 10.1016/bs.acdb.2020.01.006.
- Bhopal, SS., Roy, R., Verma, D., Kumar, D., Khan, B., Soremekun, S., Oates, J., Divan, G., Kirkwood, BR. (2022). Using the Mothers Object Relations Scale for early childhood development research in rural India: Findings from the Early Life Stress Sub-study of the SPRING Cluster Randomised Controlled Trial (SPRING-ELS). *Wellcome Open Res*. 2022 Jan 31; 6:54. doi: 10.12688/wellcomeopenres.16591.2.
- Bowman, LC., McCormick, SA., Kane-Grade, F., Xie, W., Bosquet Enlow, M., Nelson, CA. (2022). Infants' neural responses to emotional faces are related to maternal anxiety. *J Child Psychol Psychiatry*. 2022 Feb;63(2):152-164. doi:10.1111/jcpp.13429.
- Bradford, AB., Burningham, KL., Sandberg, JG., Johnson LN. (2017). The Association between the Parent-Child Relationship and Symptoms of Anxiety and Depression: The Roles of Attachment and Perceived Spouse Attachment Behaviors. *J Marital Fam Ther*. Apr;43(2):291-307. doi: 10.1111/jmft.12190.
- Brodie, B. (2019). Object Relations and Intersubjective Theories in the Practice of Psychotherapy .Edition 1st Edition,First Published 2019, Pub. Location London Imprint Routledge. Pages 304.DOI doi:10.4324/9780367855697.
- Caspi, A., Houts, RM., Ambler, A., Danese, A., Elliott, ML., Hariri, A., Harrington, H., Hogan, S., Poulton R, Ramrakha, S., Rasmussen, LJH., Reuben, A., Richmond-Rakerd, L., Sugden, K., Wertz, J., Williams BS., Moffitt, TE. (2020). Longitudinal Assessment of Mental Health Disorders and Comorbidities Across 4 Decades Among Participants in the Dunedin Birth Cohort Study. *JAMA Netw Open*. 2020 Apr 1;3(4): e203221. doi: 10.1001/jamanetworkopen.2020.3221.
- Chen Q, Kong Y, Gao W, Mo L. (2018). Effects of Socioeconomic Status, Parent-Child Relationship, and Learning Motivation on Reading Ability. *Front Psychol*. 2018 Jul 25; 9:1297. doi:10.3389/fpsyg.2018.01297.
- Datu, J. A. D. (2017). Sense of relatedness is linked to higher grit in a collectivist setting. *Personality and Individual Differences*, 105,135-138. doi:10.1016/j.paid.2016.09.039.
- Dela Cruz KL, Kelsey CM, Tong X, Grossmann T. (2023). Infant and maternal responses to emotional facial expressions: A longitudinal study. *Infant Behav Dev*. 2023 May; 71:101818. doi: 10.1016/j.infbeh.2023.101818.
- De Falco, S., Emer, A., Martini, L., Rigo, P., Pruner, S., Venuti, P. (2014). Predictors of mother-child interaction quality and child attachment security in at-risk families. *Front Psychol*. 2014 Aug 20; 5:898. doi: 10.3389/fpsyg.2014.00898.
- Driscoll, K., Pianta, R.C. (2011). Mother's and father's perceptions of conflict and closeness in parent-child relationships during early childhood. *Journal of early childhood and infant psychology*, 7, 1-18.

- Ekman P, Friesen W (1972). Constants Across Culture in the Face of Emotion. *Journal of Personality and Social Psychology*; 17: 124-9. doi:10.1037/h0030377.
- Grusec, J. E., Chaparro, M. P., Johnston, M., and Sherman, A. (2014). "The development of moral behavior from a socialization perspective," in *Handbook of Moral Development*, eds M. Killen and J. G. Smetana. *Psychology Press*, 113–134. doi:10.4324/9780203581957.
- Hada, A., Imura, M., & Kitamura, T. (2022). Development of a Scale for Parent-to-Baby Emotions: Concepts, Design, and Factor Structure. *Psychiatry and Clinical Neurosciences Reports*, 1(3): e30. doi:10.1002/pcn5.30
- Hair, J. F., Babin, B. J., Anderson, R. E., & Black, W. C. (2019). *Multivariate data analysis* (8th ed.). *Cengage Learning Health*. 2019; 33(4): 282–300. doi. 1473756545, 9781473756540.
- Hickey, E. J., Hartley, S. L., & Papp, L. (2020). Psychological well-being and parent-child relationship quality in relation to child autism: an actor-partner modeling approach. *Family Process*, 59, 636–650. doi:10.1111/famp.12432.
- Huston, A. C., & Rosenkrantz Aronson, S. (2005). Mothers' time with infant and time in employment as predictors of mother-child relationships and children's early development. *Child Development*, 76(2),467–482. doi:10.1111/j.14678624.2005.00857.
- Iqbali, M., Mousavi, V., & Hakima (2015). The effectiveness of transactional analysis training on mothers' parenting styles. *Bi-Quarterly Journal of Family Psychology*. 3(2)17-26. <https://www.sid.ir/paper/250058/fa>
- Itir Onal Ertugrul, Yeojin Amy Ahn, Maneesh Bilalpur, Daniel S. Messinger, Matthew L. Speltz & Jeffrey F. Cohn (2023). Infant AFAR: Automated facial action recognition in infants. *Behavior Research Methods volume 55, pages 1024–1035*. doi:10.3758/s13428-022-01863-y.
- Kernberg Otto, F. (2021). Some implications of new developments in neurobiology for psychoanalytic object relations theory. *Neuropsychoanalysis*,24, 3-12. doi:10.1080/15294145.2021.1995609.
- King, R. B. (2015). Sense of relatedness boosts engagement, achievement, and well-being: A latent growth model study. *Contemporary Educational Psychology*, 42, 26-38. doi:10.1016/j.cedpsych.2015.04.002.
- Khorramabadi R, Pouretamad HR, Tahmasian K, Chimeh N. (2009). A comparative study of parental stress in mothers of autistic and non-autistic children. *Journal of Family Research*. 2009; 5(3): 387-99. <https://www.sid.ir/paper/122215/en>
- Moulson Kristina Safar Margaret C. (2020). Three-month-old infants show enhanced behavioral and neural sensitivity to fearful faces. *Developmental Cognitive Neuroscience*. 42.134-149. doi: 10.1016/j.dcn.2020.100759.
- Kyriazos, T. (2018) Applied Psychometrics: Sample Size and Sample Power Considerations in Factor Analysis (EFA, CFA) and SEM in General. *Psychology*, 9, 2207-2230. doi:10.4236/psych.2018.98126.
- Laura M, O'Reill LY, Treter M., Galena R. K., Narayan, A. J. (2022). Parent-Child Relationship Quality in the Family of Origin and Later Romantic Relationship Functioning:A Systematic Review. *Fam Process*. Mar;61(1):259-277. doi: 10.1111/famp.12650.
- Layland EK, Hodge CJ, Glaza M, Peets JO. (2020). Rethinking Leisure Time Use Metrics: Greater Diversity in Shared Sibling Leisure is Associated with Higher Relationship Quality during Emerging Adulthood. *J Soc Pers Relat*. 2020 Feb;37(2):516-537. doi:10.1177/0265407519867771.
- Lemmon, M., Patterson, SE., Martin, MA. (2018). Mothers' Time and Relationship with Their Adolescent Children: The Intersecting Influence of Family Structure and Maternal Labor Force Participation. *J Fam Issues*. 2018 Jun;39(9):2709-2731. doi:10.1177/0192513x18756929.
- Lewallen, A. C., & Neece, C. L. (2015). Improved social skills in children with developmental delays after parent participation in MBSR: The role of parent-child relational factors. *Journal of Child and Family Studies*, 24, 3117–3129. doi:10.1007/s10826-015-0116-8
- Malczyk, B. R., and Lawson, H. A. (2017). Parental monitoring, the parent-child relationship and children's academic engagement in mother-headed single-parent families. *Child. Youth Serv. Rev*. 73, 274–282. doi: 10.1016/j.childyouth. 2016.12.019
- Naghipoor, M., Besharat, MA., Zeinali, A. (2022). Predicting internet addiction through object relations and ego strength: The moderating role of gender Prédire l'addiction à Internet par les relations d'objet et la force de l'ego: le rôle modérateur du genre. *Annales Médico-psychologiques, revue psychiatrique*,34.134-167. doi:10.1016/j.amp.2022.11.020.
- Oates, J. (1998) 'Risk Factors for Infant Attrition and Low Engagement in Experiments and Free-play', *Infant Behaviour and Development*, 21, pp. 555-569. doi:10.1016/S0163-6383(98)90029-7
- Oates, J., Gervai, J. (2019). Mothers' perceptions of their infants. *J Prenat Perinat PsycholHealth*. 2019; 33(4): 282–300. <https://birthpsychology.com/journal/article/mothers-%E2%80%99-perceptions-their-infants>
- River, LM., O'Reilly Treter, M., Rhoades, GK., Narayan, AJ. (2022). Parent-Child Relationship Quality in the Family of Origin and Later Romantic Relationship Functioning: A Systematic Review. *Fam Process*. 2022 Mar;61(1):259-277. doi:10.1111/famp.12650.
- Rodas, N. V., Zeedyk, S. M., & Baker, B. L. (2016). Unsupportive parenting and internalizing behavior problems in children with or without intellectual



- disability. *Journal of Intellectual Disability Research*, 60, 1200–1211. doi:10.1111/jir.12332
- Roeters, A., van der Lippe, T., & Kluwer, E. S. (2010). Work characteristics and parent-child relationship quality: The mediating role of temporal involvement. *Journal of Marriage and Family*, 72(5), 1317–1328. doi:10.1111/j.1741-3737.2010.00767.
- Schuringa H, van Nieuwenhuijzen M, Orobio de Castro B, Matthys W. (2015). Parenting and the parent-child relationship in families of children with mild to borderline intellectual disabilities and externalizing behavior. *Res Dev Disabil*. 2015 Jan; 36:1-12. doi: 10.1016/j.ridd.2014.08.018.
- Shannon K. Jacobsen, Amarat, Z. (2020). Quantity or Quality? Assessing the Role of Household Structure and Parent-Child Relationship in Juvenile Delinquency. *Deviant Behavior* 43(4):1-14. doi:10.1080/01639625.2020.1774241.
- Simkiss DE, MacCallum F, Fan EE, Oates JM, Kimani PK., (2019). Stewart-Brown S. Validation of the Mothers Object Relations scales in 2-4-year-old children and comparison with the Child-Parent Relationship Scale. *Health Qual Life Outcomes*. 2013 Mar 21; 11:49. doi:10.1186/1477-7525-11-49.
- Toor, K. K. (2018). Parent-child relationships and students' academic achievement: A study of secondary school students. *Journal of Educational Studies Trends and Practices*, 8, 38-56. doi:10.52634/mier/2018/v8/i1/1418.
- Totsika, V., Hastings, RP., Emerson, E., Hatton, C. (2020). Early Years Parenting Mediates Early Adversity Effects on Problem Behaviors in Intellectual Disability. *Child Dev*. 2020 May;91(3): e649-e664. doi: 10.1111/cdev.13273.
- Vlierberghe L, Diamond G, Bosmans G. (2023). Middle childhood attachment-based family therapy: Theory and model description. *Fam Process*. 2023 Sep;62(3):1040-1054. doi:10.1111/famp.12887.
- Zabidi AS, Hastings RP, Totsika V. (2023). Spending leisure time together: Parent child relationship in families of children with an intellectual disability. *Res Dev Disabil*. 2023 Feb; 133:104398. doi: 10.1016/j.ridd.2022.104398.
- Zeigler-Hill, Virgil; Shackelford, Todd K.; Hangen, Emily J.; and Elliot, Andrew J., "Encyclopedia of Personality and Individual Differences" (2020). *Psychology Faculty Book Gallery*. 15. <https://digitalcommons.fairfield.edu/psychology-books/15>.