# **Original Article**

# Psychometric Properties of the Persian Version of Interpersonal Mindfulness in Parenting Scale

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#### **Abstract**

Objective: This study was designed to explore the psychometric properties of the Persian version of the Interpersonal Mindfulness in Parenting Scale (IMP-S).

Method: This cross-sectional and psychometric study was performed on a sample of 491 parents in Iran who had at least one child in their home and were selected using the convenient sampling method. The Interpersonal Mindfulness in Parenting Scale (IMP-S), Mindful Attention Awareness Scale, Parental Authority Questionnaire, and the Forms of Self-Criticizing/Attacking & Self-Reassuring Scale were conducted on the sample. The validity of the IMP-S was assessed by factor analysis and Pearson correlation coefficients, while reliability was calculated by Cronbach's alpha.

Results: At first, the whole data was analyzed using confirmatory factor analysis based on the original English version of the IMP-S. The proposed hypothesized factor solution was not good enough (CMIN / DF = 7.06. RSMEA = 0.081, CFI = 0.732, SRMR = 0.0860). Exploratory factor analysis and parallel analysis led to a three-factor structure for the 28 items, which included mindfulness toward the child, mindfulness about oneself and emotional awareness of parenting. The results of confirmatory factor analysis showed that the data was more fitted with this new three-factor solution (CMIN / DF = 2.06, CFI = 0.82, NFI = 0.715, RMSEA = 0.065, SRMR = 0.0795). The IMP-S was found to have a positive correlation with trait mindfulness, reassured self, and authoritative parenting style, whereas this association for the IMP-S and hatred self, inadequate self, and authoritarian parenting style was negative. The reliability of the whole scale was 0.84 and it was 0.77, 0.83, and 0.68 for the first, second, and third subscales, respectively.

Conclusion: It seems that the Persian version of the IMP-S with three factors can better evaluate mindful parenting among the Iranian population. In contrast to people from other countries, Iranian people perceive mindfulness toward themselves and their children during parenting practice as two distinct issues.

**Key words:** Emotional Awareness; Mindfulness; Parenting; Reliability and Validity

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Parenting is one of the hot topics of the recent decades, as families all over the world are concerned about how to treat and educate their children. Parenting studies have shed light on the nature, function, and outcomes of different parenting styles. As part of an innovative model, the role of emotional regulation strategies and mindfulness have been incorporated into parenting practice and a new theoretical model called Interpersonal Mindfulness in Parenting (IMP) was proposed by Duncan (1). According to this model, IMP includes the ability to listen with full attention, nonjudgmental acceptance of oneself and the child, emotional awareness of oneself and the child, self-regulation in the parenting relationship, and compassion for oneself and the child (1, 2). Mindfulnessbased parenting programs have been shown to improve parenting effectiveness including parenting self-efficacy and decrease maladaptive parenting behaviors such as overactive parenting practices (3-5). Furthermore, mindfulness in parenting is associated with improved parenting styles and reduced levels of stress, as well as predicting children's internalizing behaviors (6, 7). To assess these dimensions, a self-report questionnaire (i.e., the IMP-S) was developed and examined in several studies. The validity and reliability of the IMP-S have been investigated in different countries, such as the United States of America (1), Germany (8), South Korea (9), China (10), Portugal (11), and Australia (7). The original scale in each of these studies was modified, and different patterns of hypothesized subscales were reported. For instance, in the Dutch study (8), two items were omitted from the factor list and the final factor solution resulted in six factors, while in the South Korean study, 13 items were omitted, and the final factor list led to 18 factors (9).

Culture can influence parenting styles, parenting cognitions, dysfunctional parental disciplines, and components of parenting styles (12-14). According to the literature, possible cultural influences on parenting can be explained by the ways parents define good behavior or appropriate forms of emotional expression, accepting or disapproving of independence, autonomy, or behavioral inhibition according to the culture (13, 15).

Iran's culture is a fusion of traditional religious beliefs and collectivist values. Previous empirical research has shown some evidence supporting the importance of cultural factors on parenting practices and beliefs among Iranian parents (14, 16, 17). Iranian parents are known for teaching their children obedience, harmony, and avoiding disagreements with their parents (18). However, the Iranian family has undergone some changes during these decades, and there is a growing inclination toward individualistic cultural values among Iranian parents. Compared to past decades, for instance, there has been a remarkable decline in the average number of siblings within Iranian families. In addition, children today have more freedom, and families are providing them with more

choices as well as showing more respect for their values and lifestyles.

A comparison of the factor structures of the IMP-S among individualistic and collectivistic cultures revealed slight differences between the factor structures and the items related to those factors (7-9). The IMP-S structure also raises the question of whether the items related to children were separated from the items related to parents. The distinction or similarity between child-related and parentrelated items in mindful parenting may be due to cultural values. Among collectivistic cultures, parents have more authority and may justify using different ways of treating themselves and their children (13, 18). Therefore, it is hypothesized that we would find separated items for children and parents in the IMP-S in collectivist cultures, as compared to individualistic ones. However, previous studies have not supported this claim, and we only see partial support for separating items in an individualistic culture (8). Therefore, new studies must be conducted to resolve these types of controversies. Conducting new research with the aim of re-examining the characteristics of this test among Iranian people could lead to novel insights into the influence of culture on representations and meanings of mindful parenting.

## **Materials and Methods**

#### Participants and Study Design

It is a cross-sectional study that aimed to investigate the psychometric properties of a self-report scale. The sample included 491 parents (389 mother and 102 fathers) who had at least one child or adolescent aged between 5 and 15 years old. The participants were informed that their participation in the study was anonymous and voluntary. The survey link was shared on social networks, including WhatsApp and Instagram. The criteria for selecting the number of data were based on standard resources such as Meyers et. al's suggestion of the minimum sample size for conducting factor analysis (19). We wanted to gather 500 data but after checking the data and omitting noncompleted data, 491 data were used for statistical analysis. We then divided the sample into two groups (n1 = 251, n2 = 240).

#### Instruments

#### Interpersonal Mindful in Parenting Scale (IMP-S):

This scale has 31 items rated on a 5-point Likert scale that ranges from 1 (never true) to 5 (always true). The IMP-S was translated into Persian and back-translated into English by a group of professionals who had fluency in both Persian and English languages to validate the questionnaire. The original English form of this scale consisted of five subscales: (1) listening with full attention to the child, (2) non-judgmental acceptance of the self and the child, (3) emotional awareness of the self and the child, (4) self-regulation in the parenting relationship, and (5) compassion for the self and the child. Before using the IMP-S scale, we contacted Larissa G. Duncan via email and informed her about our request to use IMP-S in a psychometric study among Iranian

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people. After obtaining permission, we translated the scale into Persian by the first author of this study and then back-translated by another translator from Persian to English. We sent the back-translation to Larissa G. Duncan, and she confirmed the translation and commented on three items, which were finally adjusted to ensure a more appropriate wording of the scale.

Mindful Attention Awareness Scale (MAAS): This 15item scale measures a person's ability to live in the present moment while paying attention nonjudgmentally and purposefully (20). The Persian version of this scale has been examined among Iranian students in universities in the United States of America and demonstrated a singlefactor solution with adequate factor loading for all items (21).

Parental Authority Questionnaire (PAQ): The scale consists of 30 items assessing parenting styles and includes three subscales: authoritarian, authoritative, and permissive parenting styles (22). The psychometric properties of this scale were examined among different ethnic groups in the United States of America and the results showed that the factor structure and reliability of this scale were modest and generally within the acceptable range (23). The reliability (Cronbach's alpha) of the subscales among Iranian students was calculated to be 0.69, 0.77, and 0.73 for authoritative, authoritarian, and permissive parenting styles, respectively (24).

The Forms of Self-Criticizing/Attacking & Self-Reassuring Scale (FSCRS): This scale consists of three subscales including hatred self, inadequate self, and reassured self (25). It is composed of 22 items and each statement is scored on a 5-point Likert scale from 0 ("not at all like me") to 4 ("just like me"). The psychometric properties of this scale and its subscales have been reported to be appropriate for non-clinical people and patients with a variety of mental disorders (26). The reliability (Cronbach's alpha) of the Persian version of the FSCRS was calculated to be 0.83 to 0.93 among Iranian adolescents (26).

#### Statistical Analysis

Using principal component analysis with Promax rotation, we investigated the factor structure of the Persian version of the IMP-S. Pearson correlations between scores in IMP-S, MAAS, PAQ and FSCRS were employed to test construct validity. For reporting the results of the study, we used the multitrait-multimethod matrix approach (27).

#### **Results**

The parents had a mean age of  $35 \pm 4.5$  years (age range: 17-61), and the average number of children was two (median = 2, mean = 1.78, SD = 0.0825, range: 1-9). The majority of parents were employed (44.2%) and had completed graduate or post-graduate studies (40.1%). The demographic features of the sample are indicated in Table 1.

Table 1. Demographic Features of Iranian Parents in the Interpersonal Mindfulness in Parenting Scale Validation Study

	Frequency	Percentage
Mother	389	79.2
Father	102	20.8
Age		
17-25	14	2.9
26-34	130	26.5
35-43	246	50.1
44-52	93	18.9
53-61	8	1.6
Education		
Under diploma	32	6.5
Diploma	85	17.3
Bachelor	20	4.1
Associate	157	32
Master	158	32.2
PhD	39	7.9
Job		
Householder	201	40.9
Free work	63	12.8
Employed	217	44.2
Unemployed	10	2

#### **Validity**

#### **Content Validity**

We assessed content analysis by evaluating the cultural appropriateness of the test content for Iranian people. This evaluation was done by three clinical child psychologists, and the final translation of the IMP-S was revised based on their comments. They confirmed that the items could represent the parenting issues among Iranian families. In the next step, we put the IMP-S in a new table and asked a group of ten mental health professionals who work with families in public or private mental health centers to rate each item based on three categories ('essential, 'useful', 'not necessary'). Using the content validity formula (28), the Content Validity Ratio (CVR) was calculated for each item. The results indicated acceptable values for all items on the scale (0.62 < CVR < 1). Those items with low CVR were checked and additional efforts were made to better adapt them with the parenting issues in Iran.

## **Construct Validity**

We divided the sample into two groups, and we first examined the fit of half of the data for the proposed original test model (English version). The findings did not support the fit of this model (RSMEA = 0.081, CFI = 0.732, SRMR = 0.0860). Additionally, there was weak correlation between the items and the hypothesized factor, and the items did not load on the originally hypothesized subscales. Subsequently, an Exploratory Factor Analysis

(EFA) was performed on the other half of the data (n = 240) to determine the factor structure of the Persian version of the IMP-S. EFA with Promax rotation resulted in six factors with specific outcome values higher than 1. According to the parallel analysis (Table 2), three factors had the best fit with the data.

Table 2. Parallel Analysis of Interpersonal Mindfulness in Parenting Scale among Iranian Parents

Eigenvalues	Random Means	Random 95 Percentile	Real Data
1	1.40	1.30	2.076
2	1.26	1.19	1.97
3	1.17	1.12	1.82
4	1.09	1.05	0.70
5	1.03	0.99	0.58
6	0.98	0.93	0.52
7	0.92	0.87	0.46
8	0.85	0.80	0.45
9	0.78	0.72	0.38

Moreover, we checked the fitness of models (three, six, and five factors) by the Lavvan Package (29). The results of this analysis showed that the three-factor model (BIC = 1009/56) exhibited better fit with the data than six- (BIC = 1029/51) and five-factor models (BIC = 1088/80). The results of EFA indicated that the sampling adequacy index was suitable for evaluating the data (KMO = 0.905, Bartlett's test = 2.90, P < 0.001). Data related to the relationship between the items and factors are shown in Table 3. Initially, the cross-loaded items 16 and 19 were deleted. After that, the relationships between the remaining items and factors were investigated.

According to the results of EFA, the first factor predicted twenty-eight percent (28.68%) of the total variance (eigenvalue = 8.890); the second factor predicted 9.37% of the total variance (eigenvalue = 2.66), and the third

factor predicted 4.7% of the total variance (eigenvalue = 1.46).

The pattern obtained indicated that questions 1, 3, 4, 7, 22, 24, 25, 27, 28, 30 and 31 belonged to the first factor, items 5, 9, 11, 12, 13, 14, 15, 17, 23, 26 and 29 belonged to the second factor, and items 2, 6, 8, 10, 18 and 20 belonged to the third factor. Compassion and nonjudgmental acceptance, emotional awareness, and attentive listening with full attention to the child subscales comprised the first factor. Consequently, we used the term "mindfulness toward the child" to describe this factor. Compassion and non-judgmental acceptance and emotional awareness and listening with full attention toward oneself subscales comprised the second factor. Thus, we named factor 2 as "mindfulness about oneself". The third pattern included two items from the subscales of Compassion for the child and self, Emotional awareness, Nonjudgmental acceptance of the self and the child, and two items from Self-regulation in the parenting relationship of the original version of the questionnaire. Accordingly, we named this factor "Emotional awareness of parenting.".

In the next step, the fit of the three-factor model was examined by Confirmatory Factor Analysis (CFA) as presented in Figure 1. The fit indices of the modified model support the acceptable structure of this solution in the second sample (CMIN / DF = 2.06, CFI = 0.82, NFI = 0.715, RMSEA = 0.065, SRMR = 0.0795). The correlation between the factors is shown in Table 4. Furthermore, the fit indices for three- and six-factor models are presented in Table 5.

As shown in Table 6, the correlation coefficients between the total score of this scale and other equivalent variables are consistent with the theoretical model of the IMP-S. The associations between all the subscales with authoritative parenting were significant and positive. Moreover, both total scores in the IMP-S and its subscales were positively associated with trait mindfulness score and reassured self in FSCRS whereas the IMP-S total score and subscale scores are negatively associated with hatred self and inadequate self in FSCRS.

Table 3. Factor Loadings of Interpersonal Mindfulness in Parenting Scale by Principal Component Analysis

Items	Factor 1	Factor 2	Factor 3
Not listening to the child with full attention	0.447	0.093	-0.120
2. When upset with the child, noticing feelings before acting	0.016	-0.031	0.427
3. Noticing the impact of the child's mood on the parent's mood	0.549	0.225	0.005
4. Listening carefully to the child's ideas	0.670	0.254	0.035
5. Reacting too quickly to the child's behavior	0.115	0.604	0.231
6. Being aware of the impact of the parent's mood on parenting behaviors	0.196	0.150	0.484

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7. Allowing the child to express his/her feelings	0.772	0.110	-0.287
8. Calmly telling the child how the parent is feeling when upset	0.408	0.336	0.476
9. Rushing through activities with the child	0.245	0.518	0.054
10. Accepting child's independence	0.165	0.278	0.380
11. Realizing later feelings affect parenting decisions	0.296	0.621	0.166
12. Not easily noticing the child's feelings	0.107	0.526	-0.134
13. Being easily distracted when doing things with the child	0.175	0.493	0.073
14. Regretting things said or done when upset with the child	0.134	0.675	0.290
15. Self-criticism when making mistakes as a parent	0.219	0.772	0.242
16. Trying to keep emotions in balance when upset with the child	0.544	0.478	0.582
17. Self-blaming during difficult times with the child	0.152	0.736	0.160
18. Accepting parenting failures	0.020	0.110	0.365
19. Being busy thinking about other things and not listening to the child	0.570	0.500	0.322
20. Self-forgiving when regretting parenting actions	0.188	0.198	0.512
21. Pausing before reacting in difficult situations with the child	0.559	0.603	0.570
22. Noticing when the child is worried	0.670	0.171	0.145
23. Self-criticism for not being the desired type of parent	0.249	0.701	0.282
24. Paying close attention to the child when spending time together	0.717	0.143	0.109
25. Being kind to the child when he/she is upset	0.704	0.211	0.275
26. Negative comparisons with other parents in difficult times	0.172	0.665	0.282
27. Being nurturing to the child when he/she is going through difficult times	0.662	0.081	0.278
28. Trying to understand the child's point of view	0.702	0.194	0.295
29. Getting carried away with feelings when upset with the child	0.188	0.625	0.264
30. Being able to identify the child's feelings when the child does not express them	0.523	0.284	0.183
31. Trying to be patient when the child is going through difficult times	0.736	0.251	0.113

Table 4. Correlation Coefficients between Interpersonal Mindfulness in Parenting Scale Factors

Factors	Factor 1	Factor 2	Factor 3
Mindfulness toward the child	1	0.604	
Mindfulness about oneself		1	
Emotional awareness of parenting	0.898	0.652	1

Table 5. Results of the Confirmatory Factor Analysis of Interpersonal Mindfulness in Parenting Scale
Based on a Five-Factor Structure and Three-Factor Structure

	X2/df	GFI	AGFI	CFI	NFI	RMSER	SRMR
Five-factor model	7.06	0.651	0.765	0.732	0.715	0.081	0.0860
Three-factor model	2.06	0.923	0.887	0.82	0.828	0.065	0.0795

Criteria and Convergent Validity

Table 6. Correlations between Factors of Persian Versions of Interpersonal Mindfulness in Parenting Scale and other Variables

	1	2	3	4	5	6	7	8	9	10	11
1.Factor1	-	0.36*	0.49*	0.81*	0.40	-0.25*	0.41*	0.43*	-0.25*	0.32*	-0.29*
2.Factor2		-	0.38*	0.80*	-0, 70	-0.22*	0.18*	0.48*	-0.54*	0.52*	-0.51*
3.Factor3			-	0.71*	0.071	-0.24*	0.36*	0.29*	-0.24*	0.39*	-0.23*
4. Total IMP-S				-	0.001	-0.30*	0.39*	0.54*	-0.47*	0.53*	-0.47*
5. Permissiveness					-	0.25*	0.10*	-0.11*	-0.16	0.12*	0.008
6. Authoritarian						-	-0.33*	-0.22*	0.18*	-0.18*	0.22*
7. Authoritative							-	0.16*	-0.36	0.23*	0.11*
8. Mindfulness								-	-0.49*	0.38*	-0.50*
9. Inadequate self									-	-0.56*	0.82*
10. Reassured self										-	-0.62*
11. Hatred Self											-

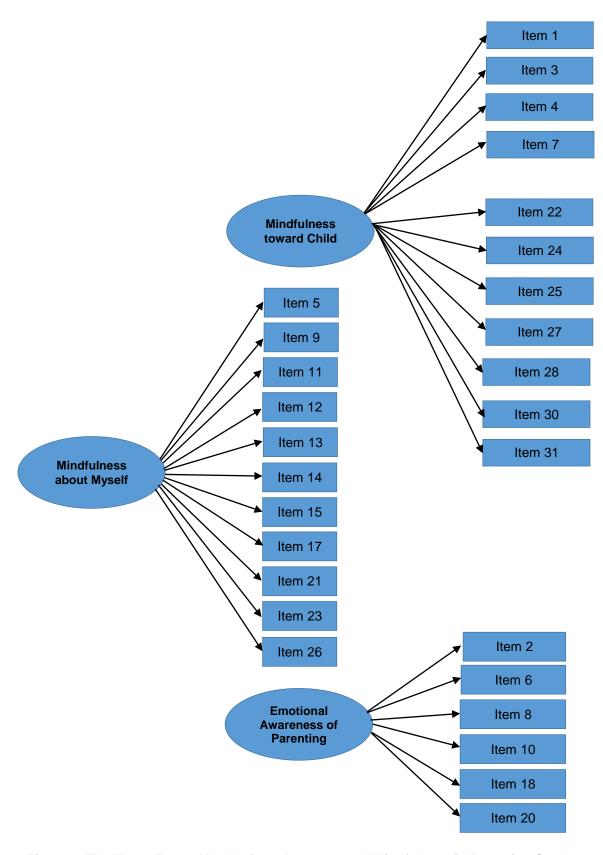


Figure 1. The Three-Factor Model of the Interpersonal Mindfulness in Parenting Scale

#### **Ecological Validity**

However, we did not assesse the performance of parents in real-world settings, but association between the scores in IMP-S and similar constructs such as trait mindfulness and parenting style may indicate ecological validity of the IMP-S. Further studies could examine the ecological validity of the IMP-S by investigating the relationship between parents' reports and their real-world parenting functioning.

#### Reliability

The reliability of the whole scale was 0.84, and it was 0.77, 0.83, and 0.68 for the first, second, and third subscales, respectively. This indicates that the reliability of this Persian version of IMP-S is appropriate.

# **Discussion**

The purpose of this study was to investigate the psychometric properties of the IMP-S among Iranian parents. The results supported the validity and reliability of this scale for use in research or clinical practice. However, the findings from conducting confirmatory factor analysis on the proposed original scale (including five separate factors) were not fitted with the data. Exploratory factor analysis with principal component analysis and parallel analysis led to three separate factors which demonstrated good enough fitness in the second confirmatory analysis. Additionally, the final fitted model explained (42.75%) of the variance of the theoretical model and three questions were deleted from the original English version of the IMP-S. According to these results, the factor structure of the scale was different from what was hypothesized in the original scale. This indicates that Iranians represent mindful parenting differently from other countries. For the Persian version of the IMP-S, the following subscales were suggested: (1) mindfulness toward the child, (2) mindfulness about oneself, and (3) emotional awareness of parenting. The patterns of factors for the IMP-S are similar to those of the Dutch version (8), but they are inconsistent with those of the original English version (2). The Iranian version of the IMP-S has fewer items than the English, Dutch, South Koreans, and Chinese versions. Items that are assigned to specific factors in the IMP-S have been merged into new and broader factors in the Iranian version. According to this study, mindfulness parenting in Iran is divided into three general factors which do not consider sub-processes such as compassion, self-regulation, and non-judgmental acceptance of themselves and their children as separate processes. However, it turned out that Iranian people perceive mindfulness issues related to themselves and their children differently. This pattern is like the German version. It is suggested by DeBruine et al. (2014) that this is a common pattern among those who do not receive much care from their parents during childhood or experience permissive parenting or who have children with more disruptive behavior. Another explanation may be due to cultural differences that promote different ways of relating to oneself and the child in parenting. This

claim could be examined in cross-cultural studies. Another study among Iranian people demonstrated that the meanings and functions of a hypothesized construct (for example, volunteer function) have a more combined structure and are less differentiated from the original conceptualization of this construct (30). It may be related to the fact that Asian people tend to think more holistically rather than analytically (30, 31). This study indicates that mindful parenting training among Iranian people could be targeted at mindfulness about oneself, parenting functioning, and mindfulness toward children as different domains. In addition, we should consider distinct skill training and parenting techniques for each domain. In outcome studies of parenting training, it is better to use specific indexes for each domain. Another cultural explanation may be related to the influences of specific factors such as religion, national identity, and socioeconomic changes that may lead to constructing parenting and mindful parenting differently among Iranian families. Conducting a cross-cultural study could reveal how these factors may influence parenting practice among Iranian families and those of other countries.

In this study, the IMP-S subscales showed expected correlations with the related constructs. IMP-S scores were positively correlated with mindfulness, reassured self, and authoritative parenting style, while negatively correlated with authoritarian parenting style, inadequate self, and hatred self. These results are consistent with some previous studies that showed a similar association between IMP-S scores, trait mindfulness, selfcompassion, depression, and ways of parenting practice (7-9, 11). Based on these results, parents who maintained a mindfulness perspective about themselves and toward their children had a better relationship with themselves and were more likely to adopt authoritative parenting styles rather than permissive or authoritarian parenting practices. Cronbach's alpha values for factors 1 and 2 on the new IMP-S were adequate, except for factor 3. The items loaded on factor 3 are shorter than those on the other two factors, which may have caused a decrease in the corresponding Cronbach's alpha. Based on these findings, factors 1 and 2 are more better ways to elicit a reliable measure of mindful parenting.

The findings of this study have some clinical implications for parenting management programs. For example, many of this programs, such as parent management training, is directly and solely focused on psychoeducation and using operant conditioning principles for managing internalizing or externalizing problems in children (32). Our findings based on the Duncan model (1) revealed that parents' emotions about parenting and their ability to regulate these kinds of emotions are also important. Therefore, considering these kinds of issues in parenting management programs could be effective in addressing internalizing or externalizing problems in children.

#### Limitation

This study has some limitations. First, we did not have enough data for reporting test-retest reliability, predictive validity, and discriminative validity. Second, most of the sample came from urban areas that had access to the Internet to complete questionnaires. Consequently, it may not be appropriate to generalize these findings to parents and families living in rural areas. The final limitation of this study is related to the non-homogeneity of the sample in terms of the number of children, socioeconomic status, and the ages of children. It would be beneficial to investigate the psychometric features of this scale among parents with more homogenous features.

There can be several suggestions for future research. Firstly, it would be appropriate to further explore the originally hypothesized subscales in the English version and add more related items to each of them. Secondly, conducting qualitative research about mindful parenting may reveal other related components that could be added to this scale. The COVID-19 pandemic has seemingly changed many things around the world, such as parenting and mindful parenting, and new studies may lead to more detailed and updated views about these topics. Thirdly, studying the psychometric characteristics of this scale among families with any neurodevelopmental disorders or parents with mental disorders could provide new insights into the nature and structure of mindful parenting. Finally, future studies could examine the casual relationship between IMP-S scores and real parenting practices.

#### **Conclusion**

The results of this study supported the three-factor model of the IMP-S among Iranian population with 28 items. The three factors include mindfulness toward the child, mindfulness about oneself, and emotional awareness of parenting. This pattern of loading in the IMP-S is partially indicative of cultural differences. In other words, Iranian parents use distinct ways for regulating their own emotions and their child's emotions. Moreover, the results indicated that Iranian people, in contrast to individuals from other countries, prefer to think of mindful parenting as a holistic concept rather than a multifaceted structure with different elements.

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# **Conflict of Interest**

None.

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