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Examination of the Psychometric Properties of the Emotional Security Scale in the Family System in High School Students

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Abstract

Abstract

The concept of emotional security, based on the theories of Davies and Cummings (1994) and Cummings and Davies (1996), refers to a state in which children maintain a secure, positive, and consistent perception of family relationships despite encountering stressful situations. This study aimed to assess the Emotional Security scale (Forman & Davies, 2005) for high school students, focusing on its validity, reliability, and factor structure. The research involved 503 high school students in Bushehr. They were selected using a multi-stage cluster random sampling method. To verify the validity of the Emotional Security scale in the family system, construct validity (confirmatory factor analysis) was used. In addition, Cronbach's alpha coefficient and structural reliability were used in SPSS and AMOS software to verify reliability. The model's fit was confirmed by goodness indices (X2/df = 2.99, GFI = 0.96, AGFI = 0.90, CFI = 0.92, NFI = 0.95, PCFI = 0.70, RMSEA = 0.60, and PCIOSE = 0.24). The research results confirmed the presence of three factors, including security, mental preoccupation, and withdrawal in the Emotional Security scale within the family system. The Cronbach's alpha indexes for security components (0.81), mental preoccupation (0.75), and withdrawal (0.74) were found to be satisfactory. Consequently, it could be concluded that the Emotional Security scale within the family system is a reliable and useful instrument for assessing the emotional security of Iranian students in psychological studies, and can be applied in research about emotional security within the family system.

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Introduction

The main goal of everyone is to obtain security and peace; people are constantly trying to reach a state of peace and security throughout their lives in the dynamic and constant process of decisions (Blatz, 1967). In the process of human development, the concept of security is one of the most challenging concepts. However, what most theorists and researchers agree on is that attachment is one of the main sources of security (Bowlby, 1980). One of the theories that specifically deals with the issue of psychological security is the attachment theory. In addition to paying attention to dynamic unconscious processes, this theory pays special attention to real interpersonal experiences and the emotional and cognitive consequences of these relationships as factors affecting mental health (Mikulincer, & Shaver, 2019, cited in Drogar et al., 2020). The concept of emotional security, as a result of Bowlby's (1980) writings, has been associated with attachment theory for many years, and the study of emotional security, regardless of its connection with attachment theory, has been forgotten in psychological research for more than 20 years. This concept reappeared in 1994 when Davis and Cummings (1994) published the emotional security theory in Psychological Bulletin. In this article, the authors used the attachment theory and suggested that emotional insecurity may be influenced by other factors such as conflicts between parents and parent-child relationships based on the belief which advocates that insecure attachment originates from negative bonds between parents and infants (Davies & Cummings, 1994). Hence, a securely attached child assumes that he is emotionally secure because of the appropriate attachment (Cummings & Davies, 1996).

Although there have been extensive theories and research studies in the field of emotional security, most of these studies are conducted in the framework of the theory of attachment styles and the instruments that have been made to measure these styles (Davies & Martin, 2013). Therefore, the need for the development and use of instruments specific to the field of emotional security is well felt. The review of the literature shows the limitations of the instruments in this regard. One of these instruments which is based on the concept of emotional security (Davies & Cummings, 1994) was developed by Forman and Davies (2005). Emotional security is defined as a state in which children have a secure, positive, and stable evaluation of family relationships in the face of stressful events (Cummings & Davies, 1996; Davies & Cummings, 1994). It includes the three components of security, mental preoccupation, and withdrawal. The security component refers to the child's trust in the family as a source of support and security; the preoccupation component refers to the child's concern for the future and well-being of himself and his family; the withdrawal component refers to the child's effort to get rid of family conflicts or to marginalize them (Forman & Davies, 2005). Therefore, according to the necessity of valid instruments to measure emotional security, this study sought to find out if the Emotional Security scale (Forman & Davies, 2005) had appropriate validity and reliability in the sample of high school students. It is worth mentioning that the Belonging and Emotional Security Tool (BEST) of Casey Family Services was validated on second-year high school Iranian students. It includes 25 items which measure the two factors of emotional security and belonging (Shadaei et al., 2016). However, the instrument used in the current research study is different from the mentioned instrument due to the ease of implementation and the variety of factors. On the other hand, considering the importance of emotional security dimensions, the existence of various questionnaires provides the researchers with the possibility to use various appropriate instruments based on the research needs. Ensuring the validity of this scale would increase the applicability of this instrument in research studies.

Methodology

The present study is a descriptive-correlational which examined the psychometric properties of the instrument. The statistical population was high school students of Bushehr in 2022. This level was selected because the conditions of students in this level were better suited to the objectives of the study. According to Kline's (2023) opinion about choosing the sample size of 10 to 20 people for each parameter, a sample of 520 students was selected. Finally, the data of the 503 students (i.e., 272 girls and 231 boys) were analyzed. In this research, the sample was collected through the multi-stage cluster random sampling method. Thus, a list of schools was prepared. Then, according to gender ratio, educational level, and students' population in each region, eight schools were selected from one region, and six schools were selected from two regions. In each school, one class was randomly selected and all students of those classes participated in the research study. In sum, the students of 14 classes were the participants of this study. The Emotional Security scale in the Family System (Forman & Davies,

2005) was used to collect data. In the present study, SPSS software (version 21) was used to estimate Cronbach's alpha coefficient, and Amos-21 software was used to conduct a confirmatory factor analysis of the scale.

Results

The descriptive indicators of the components of emotional security are shown in Table 1.

Table 1. Descriptive indicators of Emotional Security components

Factors	Mean	Std. deviation	Min.	Max.	Correction with the total score	Skewness	Kurtosis
Security	25.29	4.64	9	35	.87	-.05	-.41
Preoccupation	29.30	5.44	15	40	.82	-.12	.61
Withdrawal	25.09	4.30	14	35	.78	-.23	-.40

The goodness of fit statistics was used to check factor fit. In the present study, the Emotional Security scale was evaluated based on confirmatory factor analysis. This model had three observable variables of security, mental preoccupation and withdrawal, and a latent variable of emotional security. According to Table 2, since the values of the calculated indices were in the acceptable range, the fit of the assumed model was confirmed (Meyers et al., 2017).

Table 2. Fit indices of the Emotional Security model

Indices	**$^2\chi$**	**df**	**P**	**X^2/df**	**GFI**	**AGFI**	**CFI**	**NFI**	**PCFI**	**RMSEA**	**PCIOSE**
Value	577.32	193	.001	2.99	.96	.90	.92	.95	.70	.06	.24
Acceptable value	-	-	>.05	<3	>.90	>.90	>.90	>.90	>.50	<.08	>.05

After evaluating the fit indices, factor loadings were calculated for the latent variable of emotional security. The factor loadings show that the security index had a factor load of 0.87, the mental preoccupation index had a factor load of 0.82, and the withdrawal index had a factor load of 0.78; the highest factor load was related to the security index and the lowest factor load was related to the withdrawal index (see Table 3).

Table 3. Factor loadings in the Emotional Security scale

Factor	**Item**	**Factor loading**	**Sig.**
Security	1	.52	.001
	4	.49	.001
	5	.54	.001
	12	.46	.001
	16	.40	.001
	19	.50	.001
	20	.45	.001
Preoccupation	2	.61	.001
	6	.44	.001
	7	.43	.001
	9	.64	.001
	13	.45	.001
	14	.55	.001
	15	.67	.001
	21	.42	.001
Withdrawal	3	.58	.001
	8	.44	.001
	10	.46	.001
	11	.43	.001
	17	.52	.001
	18	.40	.001
	22	.48	.001

In this research study, Cronbach's alpha coefficient was used for estimating the reliability of the Emotional Security scale, and the coefficients of 0.81, 0.75, and 0.74 were obtained for the components of security, mental preoccupation, and withdrawal, respectively. In addition, the construct reliability of the Emotional Security scale turned out to be 0.86, which is acceptable.

Conclusion

This study was conducted to estimate the psychometric properties of the Emotional Security scale (Forman & Davies, 2005). First, the original questionnaire was translated into Persian. Then, the Persian translation was translated into English by an English language expert, and the cases of compliance and non-compliance were examined and modified in the final review. In general, according to the results, it can be stated that the Emotional Security scale (Forman & Davies, 2005) consists of the three factors of security, mental preoccupation, and withdrawal, and it is valid in terms of the general structure of emotional security. This scale has been validated in other countries. The results of the present study are in line with the findings of the developers of the scale and other researchers (e.g., Cantón-Cortés et al., 2020; Cummings et al., 2004; Lopez-larosa et al., 2019). In past studies (e.g., Cantón-Cortés et al., 2020; Cummings et al., 2004; Lopez-larosa et al., 2019), the content validity of this scale was reported to be satisfactory; similar to the present study, the specified factors (i.e., security, mental preoccupation, and withdrawal) were confirmed by the scale developers using factor analysis. On the other hand, in previous studies (e.g., Cantón-Cortés et al., 2020; Cummings et al., 2004; Lopez-larosa et al., 2019), similar to the present study, the reliability of the Emotional Security scale in the Family System using the Cronbach's alpha coefficient was satisfactory. The consistency of the results of the present study with studies in the literature shows that this instrument has good validity and can be considered a universal instrument for evaluating emotional security.

Conflict of interest

There is no conflict of interest in this research study.

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