

The Moderating Role of Family Ecological Factors (Family Size) on the Relationships between Family Environment and Emotional Intelligence

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Abstract: While a huge of literature indicates that family environment influence emotional intelligence, the family size as one of the important determinants which buffers this effect received little empirical attention. The current study investigated the moderating role of family size on the relationships between family environment and emotional intelligence among 234 early adolescents (girls and boys) in grades 2 and 3 of guidance schools of Tehran, Iran. Data were collected using the Emotional Quotient Inventory Youth Version (Bar- on EQ-i; YV, 2000) and the Moos and Moos Family Environment Scale. Results revealed that family environment fostered emotional intelligence in their early adolescents. Furthermore, the findings demonstrated that family size moderated the relationship between family environment and emotional intelligence. Specifically, early adolescents tended to indicate more emotional intelligence at higher levels of family environment when family have fewer members. These findings underscore the need for continued focus on the role of family size when assessing the links between family environment and early adolescent's emotional intelligence. Researchers have demonstrated that in family functioning related to early adolescents' emotions, family and their characters such as family size is very important in the lives at early adolescence.

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1. Introduction

The study of emotional intelligence has become an attractive topic due to many benefits of emotional intelligence. In fact, early adolescent, in high emotionally intelligence, are found to be physically and mentally healthier (Seligman, 1991) and more successful than their less emotionally intelligent peers (Cooper, 1997). Early adolescent with high developed social skills perform better academically than peers who lack these skills (Grossman & Jones, 1997). Emotional intelligence lead to improve pro-social behavior and self-management skills in early adolescent (Bar-On & Parker, 2000). Research indicates that early adolescent who are able to regulate their emotional reactions in response to others' emotions are more likely to have good social skills and to act pro-socially (Eisenberg et al., 1997).

On the other hand, our first partners in our childhood are our siblings. Our relations with them, even during childhood, include certain components which will later become significant in our relationships with others as adults. These components include mutual dependence, role division, emotional communication, and problem solving, agreement and conflict, as well as cooperation and mental health (Hughes & Carolyn, 2002). There are many assumptions about emotional intelligence and family

size. Some existing research indicates a slight relationship between emotional intelligence and family size.

There has been a growing interest in the emotional functioning of early adolescents (Goleman, 1995; Bar-On & Parker, 2000; ;Stover, 2003) and the factors that influence it (Carson & Parke, 1996; Eisenberg et al., 1996; Ozabaci, 2006; Saarni, 1989; Naghavi & Ma'rof, 2012) in order to develop more integrated theories of development (Bar-On, 2000; Stover, 2003). Emotional intelligence is associated with factors such as life satisfaction, adaptability, optimism, overall intelligence, personality, and emotional disorders like alexithymia, depression (Naghavi, Ma'rof & Mariani, 2010).

Gottman (1997) pointed that good parenting requires not only intellect but also involves emotion. In the last decade or so, science has discovered a tremendous amount about the role emotions play on our lives. Researchers have found that even more than IQ, emotional awareness and ability to handle feelings will determine success and happiness in all lifestyles, including family relationships. For parents, this quality of emotional intelligence as many now call it means being aware of early adolescence's feelings, and being able to empathize, soothe, and guide them. For early adolescence, who learn most lessons about

emotion from their family, it includes the ability to control impulses, delay gratification, motivate them, read other people's social cues, and cope with life's difficulties. In addition, early adolescence whose parents consistently practice emotion coaching have better physical health and score higher academically than early adolescence whose family do not offer such guidance. In addition Naghavi & Ma'rof (2012) believe that introverted early adolescent with high level of emotional intelligence were influenced more by the family environment as compared to extroverted early adolescent with low emotional intelligence.

Ozabaci (2006) carried out a study on the effects of family size and the number of siblings on emotional intelligence among 274 parents who are mothers and fathers of elementary school students. As a result, he found out that the family environment in which the foundations of emotional intelligence are first laid is a setting the child grows up in and acquires information relating to life. In more specific, family environment bearing healthy and high quality characteristics affects the development of the child in many ways like the ego concept of the child and his/her emotional and social development. Meanwhile, the social status of the family, the residence, relations within the family, the number of siblings and the relations among the siblings determine the characteristics of the family environment and emotional intelligence.

Consequently, considering the potential influences on emotional intelligence may be useful and vital. If numerous factors are found to influence emotional intelligence, then individuals can find ways to enhance emotional intelligence and subsequent lifelong achievement (Rippeth, 2002). This process is undoubtedly one of the importance ways that led to individual and social development (Naghavi, 2010).

In raising emotional intelligence among early adolescents, it is important to study what factors that contribute to the development of this construct. Parents are viewed as major contributors to early adolescent's emotional intelligence (McClun & Merrell, 1998). In all cultures, families are recognized as a fundamental influence for their children's and adolescents' well-being (Rotter, 1966). Parents who are approving and responsive tend to build emotional intelligence, whereas disapproving, unresponsive and uninterested parents may develop emotional intelligence in their early adolescents (Salovey & Mayer, 1990; Magnuson, 2007). Therefore, familial influences on emotional intelligence have enduring effect throughout life. However, associations between family environment and early adolescent outcomes might vary when the family size as one of the ecological factors is taken into account. Research provide evidence indicating that family with fewer

members tend to indicate more family system maintenance and use child-rearing strategies that highlight self-direction (autonomy) interpersonal skills and emotion regulation (Salovey & Mayer, 1990; Dornbush et al., 1990; Aavik et al., 2006).

Naghavi & Ma'rof (2012), demonstrate that For early adolescence, who learn most lessons about emotion from their family, it includes the ability to control impulses, delay gratification, motivate them, read other people's social cues, and cope with life's difficulties.

Nonetheless, studies have generally looked at the direct relationships between family environment and early adolescents' outcomes (Magnuson, 2007; Cohen et al., 2008) and largely ignoring the moderating or indirect influence of family size on these relationships. Hence, the main focus and contribution of this study is to examine how family members (family size) moderates the relationships between family environment and early adolescents' emotional intelligence. Besides that, it is necessary to further examine the specific conditions under which these moderating effects exist. Due to the lack of research on family functioning, some factors and their influences on early adolescents' emotional intelligence in Iran, there is much need for research that explores those factors of influence on early adolescent's emotional intelligence. Examining these interactions is another important contribution of this research.

2. Materials and Methods

The Bivariate correlations between each independent and dependent variable were studied. Hierarchical multiple regression analysis was conducted to examine whether family size moderated links between family environment and emotional intelligence. On the first Step of the hierarchical regression analysis, family size was entered, followed by family environment -system maintenance, personal growth and relationship-on Step 2 and two-way interactions on Step 3. The SPSS package (v.20) was used for the statistical analysis and the description of conclusions for the current study. The data encoding process for the three instruments utilized in this research consists of different procedures.

Participants included 234, 11-14th grade students (mean age = 12.27±1.26 years) from selected guidance schools in the 19 educational regions in the city of Tehran. There were approximately equal proportions of male and female participants. Less than twenty-one (20.2%) of the early adolescents had four and more siblings in the family, (50.7%) of early adolescents had two and three siblings in the family, (13.4%) of the sample had one sibling in the family, and (15.4%) being only child in their family.

At the beginning of the first semester of 2010-2011, the researcher visited all in grades second and third of Tehran's guidance schools and before distribution of questionnaires, a brief explanation regarding the aim of the study and the content of the instruments were given to the students.

The questionnaire was divided into three parts. The first part of the questionnaire covered background information, the second part included the Family Environment Scale and the *Bar-On EQ-i:YV* followed by a scale which assessed the respondent's emotional intelligence (Naghavi, 2012). Furthermore, the backward-forward translation procedure was used to translate the instruments into Farsi. This procedure performed by two native-speakers of the target language. Then translations are compared and checked by a third consultant, and discrepancies are solved by consensus. Students answered the questions in the class, and they were reminded that participation was voluntary, and their responses did not have any influence on their grades.

For *Demographics informaten* fathers completed a demographic form including information about level of family income, family size, fathers' level of education and age, and adolescents filled out the questions about their date of birth and gender.

Family Environment was assessed via the *Family Environment Scale (FES)*, which is development by Moos (1974). It consists of 90 true/false questions divided into three dimensions and 10 subscales. In the Relationship dimension are three subscales: cohesion, expressiveness, and conflict. The Personal Growth dimension consists of five subscales: independence, achievement orientation, intellectual-cultural orientation, active-recreational orientation, and moral-religious emphasis. The System Maintenance dimension includes two subscales: organization and control. This instrument has good internal consistency with alphas that range from 0.74 to 0.87 for three subscales and the overall stability is very good with two-week test-retest reliabilities that range from 0.77 to 0.92 (Hill, 1995). In the current study, the internal consistency was 0.73, 0.75, and 0.74 for the Relationship, Personal Growth, and System Maintenance subscales respectively.

The Emotional Quotient Inventory Youth Version (*Bar-On EQ-i:YV*, 2000) using for assessing early adolescent's emotional intelligence. This scale consists of 60 brief items and a five-point Likert style format response set (ranging from "Not True of Me" to "True of Me"). The *Bar-On EQ-i* instrument consists of the following five scales. Each scale briefly described as follow. The first scale, intrapersonal, involves the ability of the individual to understand their emotions as well as communicate and express feelings and needs. The second scale,

interpersonal, measures one's ability to form and maintain satisfying relationships with others. The adaptability scale involves measuring one's ability to manage. The fourth scale, stress management, includes one's ability to remain calm in the face of stressful events. The general mood scale measures optimism and positive outlook. Finally, the total EQ scale is a measure of one's ability to be effective in dealing with daily demands while remaining happy or satisfied.

The first step in ascertaining a respondent's EQ-i:YV results was to calculate raw five composite factors and each child's total emotional intelligence. Each item is assigned with "points" ranging from one to five based on the respondent's responses. In this study, the internal consistency (reliability) of the EQ-i:YV was examined using the Cronbach's alpha and the result was $\alpha = 0.91$. Reliability indicates the extent to which individual differences in test scores are attributable to "True" differences in the characteristics under consideration (Anastasi, 1988). A test-retest reliability of 0.71 was found with a group of eleven graders. A spearman-Brown split-half reliability of 0.74 was found for grades eleven through fourteenth. In this study, a spearman-Brown split-half reliability was 0.70.

3. Results

Following the scientific research tradition, the level of confidence for all calculations was set at alpha 0.05. An intercorrelation matrix was produced between all predictor variables and the criterion variable for the total sample as presented in Table 1.

Table1: Correlations between Major Study Variables (N=234)

Variables	1	2	3	4	5
1. Family size	-				
2. Relationship	0.05	-			
3. Personal Growth	0.09	0.14*	-		
4. System Maintenance	0.22**	0.23*	0.011	-	
5. Emotional Intelligence	0.48**	0.07	0.08	0.54**	-

* $p < 0.05$; ** $p < 0.01$

Overall, the results from the correlation analyses as illustrated in the correlation matrix identified significant relationships between some of the independent variables and the dependent variable. Specifically, the variables of family size and emotional intelligence had significant negative relationship, which suggested that as family size

increased, emotional intelligence also, tended to decrease. Contrary to expectations, no statistically significant direct relationships were found between emotional intelligence and any of the family environment except family system maintenance. The negative correlation between family system maintenance and emotional intelligence showed that early adolescents tended to have emotional intelligence when they perceived their family size as highly system maintenance.

Hierarchical multiple regression analysis was conducted to examine whether family size moderated links between family environment and emotional intelligence. On the first Step of the hierarchical regression analysis, family size was entered, followed by family environment -system maintenance, personal growth and relationship-on Step 2 and two-way interactions on Step 3.

As it has been shown in Table 2, the interaction variables at Step 3, accounted uniquely for an additional 1.7 of variance to adolescent's emotional intelligence ($F_{\{8,774\}} = 22.768, p \leq 0.001$). Examination of the variables within the third block revealed that the interaction between family system maintenance family environment and family size was significant ($\beta = 0.13, p \leq 0.05$).

Table 2: Hierarchical Multiple Regression Analyses for Predicting Early Adolescents' Emotional Intelligence from Family Environment, and Family Size (N=234)

Predictor	R ²	ΔR^2	B
Step1	0.229** *		
Family size			0.476** *
Step 2	0.270** *	0.081** *	
Relationship			0.134*
Personal Growth			0.133*
System Maintenance			0.273** *
Step 3	0.297*	0.020*	
Relationship x family size			0.007
Personal Growth x family size			0.011
SystemMaintenance x family size			0.012*

* $p < 0.05$, *** $p < 0.001$

Post-hoc regression analyses were performed in accordance with standards outlined by Aiken and West (1991) to evaluate possible differences for the

only significant interaction variables namely, family system maintenance \times family size. The values of high and low corresponding to one standard deviation above the mean and one standard deviation below the mean have been used in plotting significant interaction. Examination of these interaction effects at two levels of family size demonstrated that family system maintenance was significantly related to emotional intelligence for early adolescents whose living in family have fewer members ($b=0.178, t=4.114, p \leq 0.001$). This finding suggested that family system maintenance was most useful for early adolescents when family members is less, however it is not significant when family size was low.

4. Discussion

The purpose of the present study is to examine the moderating role of family size on the relationship between family environment and emotional intelligence. Even though some of these variables have been explored individually among predominantly Western and Caucasian early adolescents (Shumow & Miller, 2001; Paguio, 1987; Sorkhabi, 2005; Flouri, 2006), the combination of these factors and the role they may play in Iranian guidance school settings represent a novel contribution to the literature.

The first hypothesis, regarding family environment and its relation with emotional intelligence, was partially supported. The results demonstrated that family system maintenance was related to emotional intelligence. This is consistent with the findings of previous research which have shown that family system maintenance promote emotional intelligence (Magnuson, 2007; Marsiglia et al., 2007). Our findings also revealed that neither the main effect of family personal growth nor relationship family significantly predicted emotional intelligence. However, the direction of these results support those found by Nowicki and Segal (1974) that possible antecedents to emotional intelligence could be traced to the parent-child relationship.

The second hypothesis, regarding the moderating effect of family size on the relationship between family system maintenance and emotional intelligence was also supported. Additional analyses revealed that family with fewer members and high family system maintenance, tended to foster more emotional intelligence in their early adolescents. This finding is consistent with the previous research which indicates that the amount of guidance schooling that family receive positively impacts on how they structure their home environment as well as how they interact with their early adolescents in promoting positive outcomes such as academic achievement (Davis-Kean & Eccles, 2005; Ozabaci, 2006;

Shumow & Miller, 2001). In addition, Ozabaci (2006) assumed that emotional intelligence is influenced by the family members atmosphere. Therefore, it could be concluded that family with fewer members can nurture a belief in their early adolescents to affect the outcomes. They may put more emphasis on their early adolescents' responsibility in organizing relations with their environment which leads them to develop more emotional intelligence.

The present study makes several contributions to the literature by providing data on an important and understudied population of early adolescents and by bringing together a number of different constructs (family environment, emotional intelligence, and family size) that have typically only been explored individually or in pairs in the past (Marey & Salovey, 1997; Wiltfang et al., 1990).

The current study includes several limitations which need to be considered in future research. The focus here on family system main-tenance begs for replication in future research with several factors that influence on emotional intelligence of early adolescent such as family income, level of family education in order to observe any unique associations that may be present across gender of the parents.

This study suggests that family system maintenance plays a vital role in the development of emotional intelligence, and the family member is probably significant within this population.

Future research should also attempt to observe results directly from families, in regard to their family environment instead of relying strictly on students' self-report design.

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