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Maternal Education as a Moderator in the Associations between Family Functioning and Emotional Intelligence

[1]Fataneh NaghaviPh.Dand [2]Philip Orillanes

[1,2]*Department of Child and Youth Care, CDI College; Toronto, Canada*

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ABSTRACT

Family to be more specific, mother has the highest effect on individual and forms their children behaviours at any moment.The present study aims to determine the relationships between family functioning and emotional intelligence, and the role of mother's education in the family as a moderator.Sample consisted of 234 early adolescents. They were identified using Multi-Stage Cluster sampling. Data were collected using self-administered questionnaire, namely, Background Characteristics questionnaire, Schutte's (1998) Emotional Intelligence Scale, Family Assessment Device (FAD), based on McMaster's model. Regression analyses revealed that mother's education moderated the relationships between family functioning and emotional intelligence. An examination of these interaction effects at two levels of mother's education showed that early adolescents, whose mothers received high education, tended to demonstrate higher emotional intelligence when their families were found as poorly functioning.In conclusion, early adolescents with higher educated mothers are emotionally competent since their mothers provide a better family functioning.

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INTRODUCTION

The conceptual definition of emotional intelligence is defined as the ability to understand feelings in the self and others, and to use these feelings as informational guides for thinking and action (Mayer&Salover, 1990). Bar-On (1997) defines emotional intelligence as the emotional, personal, social, and survival dimensions of intelligence, which are often more important for daily functioning than the more cognitive aspects of intelligence. Martinez-Pons (1997) stated that emotional intelligence refers to the skill to monitor one's own and others' emotions, to discriminate between them, and to utilize the information to guide one's thinking.

On the other hand, family is the consequent or reaction of the whole society and its major obvious role is to transfer values, as well as cultural and credence heritage by word of mouth, maintaining kinship relations, raising and training generations, supplying basic human needs, and creating psychological and emotional balance among the members (Navabinejad, 2012). The family functioning of their children and how they react to their interests and activities, early adolescent's behaviour to one another, emotion and information exchange among them, as well as emotional protection to one another and family members' outside relations may influence early adolescent's emotional intelligence (Giammattei, 2014). Thus, family has the highest effect on individuals and forms their behaviours at any moment.

There has been a growing interest in the issues of family functioning and emotional intelligence of early adolescents (Naghavi &Ma'rof, 2012[a,b]; Ozbaci, 2006; Yamada, 2004; Manuel, 2002; Tamplin, Goodyer& Herbert, 1998), and the factors influencing them (Palmer *et al*., 2007; Brudy& Hall, 1998; Goleman, 1998; Schutte, 1998) to develop more integrated theories of development (Tamplin*et al*., 2002; Goleman, 1995; Epstein, Bishop, & Levin, 1960). In fact, emotional intelligence (EI) has recently attracted a lot of interest in research on family functioning.

Several new findings recently obtained have shown that parents with emotional intelligence are helpful. That is how family members deal with each other's feelings, and apart from possessing a basic role in their direct behaviours towards their children, they also model such interactions to them. As indicated earlier on, early adolescents pay attention to the emotional interactions of the family.

Corresponding Author: Fataneh Naghavi, Department of Child and Youth Care, CDI College; Toronto, Canada
Tel:0016477205269; E-mail: Fatanehnaghavi@gmail.com

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According Yamada (2004), children of depressed family are at increased risk of emotional difficulties and behavioural problems. Nonetheless, little is known about the effects of maternal depression on early adolescence's emotional intelligence. The purpose of this research was to examine several broad dimensions of emotional intelligence in children aged 7 to 8 years old whose mothers were with or without any background of depression. The preliminary findings indicated that gender differences in children's emotional intelligence, with an advantage for girls and an association between infant temperament and children's abilities of emotional intelligence at 7 year old.

The study carried out on emotional intelligence. Kafetsios (2004) hypothesized the relationships between attachment orientation and emotional intelligence in a research entitled, "Attachment and emotional intelligence power during lifetime". The statistical universe included 239 mature people between 19 to 66 years old who completed Mayer, Salovey, Caruso's Emotional Intelligence Test and filled in the related questionnaire. The findings indicated that secure attachment had correlation with all the subscales (except for emotion conception) and the overall score of emotional intelligence. On the contrary to what had been expected, rejecting attachment had a positive relation with the ability of emotion conception. Similarly, the results for emotional intelligence abilities between different sexual and age groups also showed a meaningful difference. Older participants achieved higher scores of the emotional intelligence division (facilitation, conception, management), whereas the female respondents achieved higher scores of emotion conception and aberration compared to their male counterparts.

Manuel (2002) conducted a study on the effects of parents on emotional intelligence among 109 students between the ages of 11 and 15 years. For emotional intelligence, families' effects on some other dimensions such as responsibilities, social functions and symptoms of depression were also been studied. In line with the analysis carried out using the Path analysis technique, it was discovered that the parent models, using methods such as encouraging, giving rewards and guiding, have crucial effects on matters of emotional intelligence, social activities and symptoms of depression.

Nakao, Takaishi, Tatsuta, Katayam, Iwase, Yorifuji, and Takeda (2000) found the impact of family environment on individual character. In this research, which was conducted between 150 children, 13 characteristics related to behaviors were determined as follows: "personal traits covering some characteristics as being active, talkativeness, being social, social skills, complying with the rules, aggressiveness, emotional control, anxiety, and cognitive intelligence. Meanwhile, the characteristics related to the family were determined to include the participation of family in raising the children, the styles used in raising the children, the relationship between spouses, the number of siblings, status in the course of birth and socioeconomic status." Based on these characteristics, they found that introverted children that have high level of emotional intelligence were influenced more by the family environment as compared to extroverted children that have low emotional intelligence.

Considering the mixed findings on the nature of the relationships between family functioning,background of early adolescents and emotional intelligence, the concept warrants further research. The findings of Naghavi and Ma'rof (2012^{b}), Khosravi (2012), Ozbaci (2006), Katyal and Awasthi (2006), Yeung, Linver and Brooks-Gunn (2002) and Parker (2000) demonstrated that early adolescents with high level of family functioning, high level of family income and high level of family education achieved higher level of emotional intelligence. Meanwhile, the result of Trinidi*et al*., (2008) contradict to the mentioned studies. The mixed findings in the study called for the need to fill this gap.

Objective:

The objectives of the present study are to:

1. Examine the relationships between family functioning and emotional intelligence among early adolescents in Tehran, Iran.
2. Examine the moderating effect of Mother's education status on the relationship between family functioning and emotional intelligence among the respondents.

Methodology:

Sample and Data Collection:

The population of research involved in this study consisted of all the Iranian students who enrolled in guidance schools of Tehran (234 students, academic year 2012-2013)based on the list by the Iranian Ministry of Education.

Measures:

Emotional Intelligence Scale:

The data were collected using (Schutte, 1998) Emotional Intelligence Scale for assessing early adolescence's emotional intelligence. The emotional intelligence scales used to assess emotional intelligence, i.e. Schutte's Emotional Intelligence Self-measuring Scale (introduced by Schutte and her colleagues in 1998 and Mayer and Salovey's original emotional intelligence model, 1990), was used to measure emotional intelligence, which includes emotional conception and appraisal, emotion regulation and emotion utilization. This scale includes 33 self-report items. This scale includes 33 self-report items. Some examples of the items included in the scale are:

A. I can easily identify my emotions and feelings.

B. I can persuade myself by imagining success in work.

C. I admire others when they do something good.

The subject selected his/her degree of agreement or disagreement by any of these sentences in a five point Likret scale, from strongly disagreed = 1 to strongly agreed = 5. In this study, the reliability for the emotional intelligence test was obtained by using Crombach's alpha, $\alpha = 0.84$.

Family Assessment Device: FAD Questionnaire:

The family assessment device describes emotional relationships and functioning among family members. It is a paper and pencil questionnaire which can be filled in by all family members over the age of twelve (Clark, Barrett, &Kolvin, 2000). This particular questionnaire was designed to measure family functioning based on McMaster's model. It contains 60 questions specifying six aspects of family functioning, namely, problem-solving, communication, affective responding, affective involvement, behaviour control, and the 7th subscale related to the overall family functioning. Every question presents a description of family and the subject chooses his/her agreement or disagreement with a sentence in a four-option scale (strongly agree = 1, agree = 2, disagree = 3, strongly disagree = 4). Sentences 1, 7, and 9 were scored reversely (strongly agree = 4; strongly disagree = 1). The family assessment device test is scored in a way that the score of each family shows its vulnerability degree; lower scores indicate sounder functioning and higher scores on the family functioning questionnaire indicate family's inefficiency. It means that a lower score on the family functioning instrument indicates healthier and better family functioning (Schmitt *et al*., 2008). The total family assessment device score was obtained by adding all the items scores. Some examples of the items include the following:

A. If a member of our family faces a problem, the rest will get involved to solve it.

B. We can rely on the support of the rest when facing a crisis.

C. When an emergency case appears, we don't know what to do.

Background Characteristics:

Studies have generally looked at the direct relationships between family functioning and emotional intelligence of early adolescents, and largely ignored the roles/effects of mother's education level (Ozabaci, 2006; Parker, Taylor &Bagby, 2001) on these relationships. Hence in this study, the researcher attempted to examine mother's education level moderate the relationships between family functioning and early adolescents' emotional intelligence. For this reason, the socio-demographic information needed for this study, which included the information about the respondent's level of mother's education, was also collected using the questionnaire. The Demographic Characteristics Questionnaire was designed by the researcher and the parents of the respondents were answered to the questionnaire.

Data Analysis:

The software being used for descriptive and inferential statistical analysis of the study was SPSS (v.20). The data encoding process for the three instruments utilized in this research consisted of different procedures.

Descriptive statistics such as percentage, mean, standard deviation and minimum and maximum were used to describe the background of early adolescents as well as the variables included in the study. In addition, the inferential statistics utilized for the data analyses in this study were Pearson correlation analysis, independent sample t-test, multiple regression analyses (a series of multiple regression equations and hierarchical regression analyses), as well as post-hoc probing regression analysis. The Pearson correlation coefficient was applied to determine the magnitude and the direction of the relationships between independent variables and dependent variables. The purpose of using this statistical method was to determine the nature of the relationships between the two variables. It explained the relationships between the variables in terms of degree, magnitude, strength or size of the correlation. Thus, to examine the moderating effects of the early adolescent's background (mother's education status) on the relationships between family functioning and emotional intelligence, hierarchical regression analyses with following post hoc probing were conducted.

Results:

As depicted in Table 1, the Skewness and Kurtosis values of all the study variables were between -2 and +2, suggesting no violation of the assumption of normality. Skewness and Kurtosis values provided information pertaining to the distribution of the scores for all the variables. The scores were normally distributed, that is, the highest number of scores appeared in the centre. The variables skew values were within the standard limits of -2 and +2 and showed a normal distribution.

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Table 1: Assessment of Normality of Distribution: Mean, Standard Deviation, Skewness and Kurtosis

	Mean	*S.D*	*Skewness*	*Kurtosis*
Family Functioning	*123.27*	*32.50*	*-0.03*	*-0.14*
Alexithymia	*40.07*	*7.66*	*0.23*	*0.13*
Emotional Intelligence	*115.76*	*15.93*	*-0.09*	*-0.03*
Antecedent				
Mother's Education	*12.43*	*3.93*	*-1.51*	*-1.98*

Note:*S.D*= Standard Deviation

Furthermore, descriptive statistics such as percentage, mean, standard deviation and minimum and maximum were used to describe the background of early adolescents as well as the variables included in the study. In addition, the inferential statistics utilized for the data analyses in this study were Pearson correlation analysis, multiple regression analyses (a series of multiple regression equations and hierarchical regression analyses), as well as post-hoc probing regression analysis. The Pearson correlation coefficient was applied to determine the magnitude and the direction of the relationships between independent variables and dependent variables. The purpose of using this statistical method was to determine the nature of the relationships between the two variables. It explained the relationships between the variables in terms of degree, magnitude, strength or size of the correlation. Thus, to examine the moderating effects of the early adolescent's background (mother's education status) on the relationships between family functioning and emotional intelligence, hierarchical regression analyses with following post hoc probing were conducted.

The result of the hierarchical regression analysis for the moderating role of mother's education on the relationship between family functioning and emotional intelligence is shown in Table 2.

The control variables entered in Step 1 accounted for 23.2% of the variances to early adolescents' emotional intelligence. The family functioning entered in Step 2 accounted for 12.5% of the variances to early adolescents' emotional intelligence. With the entry of the mother's education in Step 3, R^2 with the emotional intelligence was 36.8 and the R^2 change was 0.011. When the interaction terms were added in Step 4, the R^2 change was significant for the emotional intelligence outcome. These interactions accounted for an additional of 4.2% of the variances to emotional intelligence (F {15.787} =21.940, $p \leq 0.001$). An examination of the variables within Step 4 revealed that the interaction of family functioning and mother's education which emerged to be significant (β= 0.226, $p \leq .001$). This research empirically supports the moderating effect of mother's education on the relationship between family functioning and emotional intelligence of early adolescents.

Table 2: The Hierarchical Multiple Regression Analyses for Predicting Early Adolescents' Emotional Intelligence from Family Functioning and Mother's Education (N=234)

Predictor	*F Test (p)*	R^2	ΔR^2	*B*	*(β)*
Step1	16.904(0.000)	0.232***	0.232***		
Gender				-5.217*	-0.164*
Number of Siblings				-4.430*	-0.225*
Family Income				0.002	0.013
Father's Education				1.336***	0.299***
Step 2					
Family Functioning	24.715(0.000)	0.357***	0.125***	-0.190***	-0.381***
Step 3					
Mother's Education	21.531(0.000)	0.368*	0.011*	0.596*	0.146*
Step 4					
Family Functioning x ME	21.940 (0.000)	0.410***	0.042***	0.025***	0.226***

Note: For the F test, dfs were as follows: Step 1=16.904; Step 2=43.213; Step 3=3.970; Step 4=15.787; Bdenotes unstandardized regression coefficient; β denotes standardized regression coefficient; In Step 4, ME denotes Mother's Education; * p≤0.05*** p≤0.001.

Two new conditional variables, high and low, were created for mother's education and the follow-up simple slope analyses were applied. The two new variables were used in two separate simultaneous regressions. The equations of the separate models as well as the simple slopes for the moderator variable

and the y-intercepts were used to make a graph of the regression lines. An examination of these interaction effects at two levels of mother's education demonstrated that poor family functioning has greater impact on (b =-0.237, t=-3.911, p≤0.001) early adolescents' emotional intelligence for whose mothers attained low education. Figure 1 provides a graphic example of the interaction effects of family functioning and mother's education with emotional intelligence. The slope of low mother's education was sharper than high mother's education. The sharper means greater negative impact on emotional intelligence. Thus, it is clearly shows that poor family functioning has greater impact on early adolescents' emotional intelligence for those whose mother's education is low.

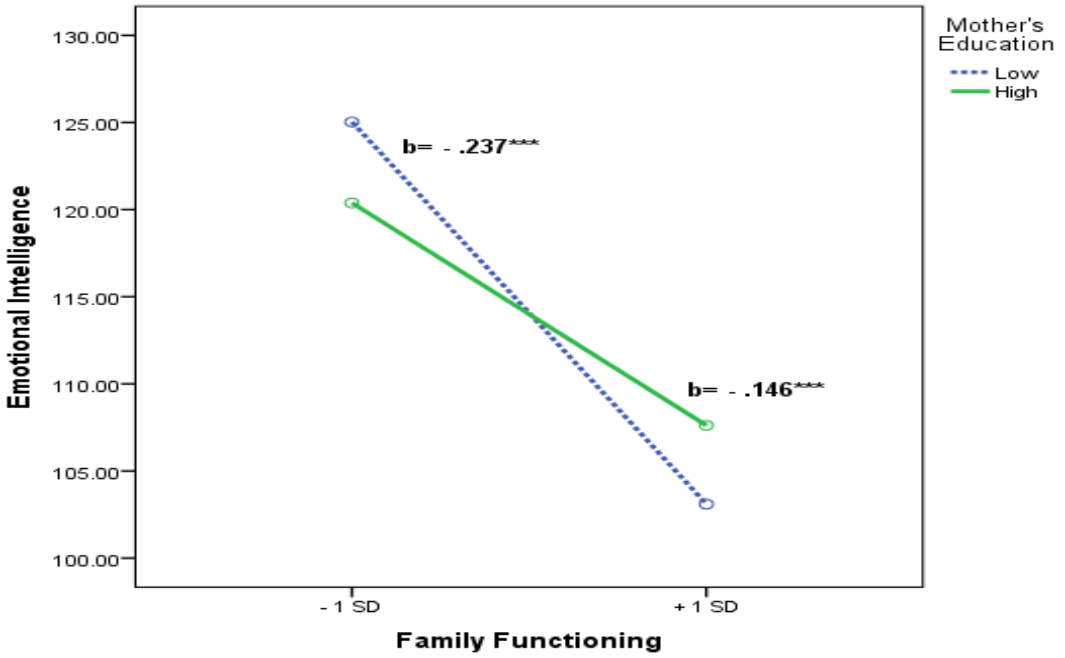

Fig. 1: A Plot Showing the Interaction between Family Functioning and Mother's Education on Emotional Intelligence; b = Unstandardized Regression Coefficient (i.e., simple slope); SD = Standard Deviation.

Discussion and Conclusion:

This study also found that early adolescents who came from higher level of mother's education tend to demonstrate higher emotional intelligence. The finding of this study also confirms the result of a previous research and supports the finding derived by Strayer and Roberts (2004) who in their study suggested that mothers in comparison to fathers are important agents in the socialization of early adolescents' emotional intelligence, whereas genetics could explain any association between parents and early adolescents' emotion.

Based on the results of this study, early adolescents' emotional intelligence and life adaptation are found to be related. School administration could include lessons on emotional control into the curricula to the profile early adolescents' education concerning emotional control by promoting class activities (such as outdoor education, field trip, picnic, day out, family day, etc.), facilitating consultation with families, establishing positive communications between the teachers and early adolescents, undertaking family educational activities and answering parents' questions so that they can take advantage of the activities to acquire the exact concepts of emotional education with emphasis on adolescence's period.

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