



The Association between Family Functioning and Aggressive Behaviors in Adolescents by the Role of Parental Mental Health as a Mediator

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Abstract

Background: Adolescents often experience changes in their hormones, psychology, and social environment, which can lead to the development of aggressive behaviors. This study aimed to examine how family dynamics are related to the aggressive behavior displayed by adolescents, with a particular focus on the role of parents' mental health as a mediating factor.

Methods: In this descriptive-correlation study, the Path analysis was conducted to determine the associations of research variables. The statistical population included all female students of junior and senior high schools in Rasht in the 2017–18 academic year. The stratified cluster sampling method was adopted to select 350 high school students. The research measurement tools included the Aggression Questionnaire, Family Assessment Device (FAD), and General Health Questionnaire–28 (GHQ-28). The data was analyzed using the SPSS version 27 software and the Smart PLS3 software as well as the structural equation modeling method. The significant level was set at 0.05.

Results: According to the research findings, all the Path coefficients in the research model were statistically significant. The results indicated that family performance had a negative and significant impact on aggression ($\beta=-0.162$, $Pvalue<0.001$), anxiety ($\beta=-0.955$, $Pvalue<0.001$), and depression ($\beta=-0.904$, $Pvalue<0.001$). Moreover, the family performance had a positive and significant effect on physical health ($\beta=0.78$, $Pvalue<0.001$) and social function ($\beta=0.886$, $Pvalue<0.001$). Physical health ($\beta=-0.348$, $Pvalue<0.001$) and social function ($\beta=-0.073$, $Pvalue=0.024$) also had a negative and significant impact on aggression as mediating variables. Additionally, anxiety ($\beta=0.351$, $Pvalue<0.001$) and depression ($\beta=0.09$, $Pvalue=0.024$) as mediating variables had a positive and significant effect on aggression.

Conclusions: Consequently, achievement motivation had a mediating role in associations of academic engagement with academic self-concept and academic support in gifted students. The findings can be used as an appropriate model for designing and developing certain programs to improve academic engagement and enhance the academic motivation of students. The findings of the current research demonstrated the impact of cognitive.

Keywords: Family functioning, Aggression, Adolescents, Mental health, Parents.

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Introduction

Adolescent behavior is heavily influenced by emotions, and when teenagers act aggressively, they are more prone to experiencing internalization issues¹. Aggression refers to any negative behavior that is violently directed toward another person and results in a negative impact on the target. It is typically an act intended to cause harm to oneself, another person, or property². While physical aggression is more common in early childhood and decreases during adolescence due to social, cognitive, and emotional development, some children and teenagers still display physically aggressive behavior³. Aggressive behavior among adolescents can be observed in various settings, including the home and school⁴. According to research, the influence of parents has a substantial impact on the development of aggression and social behavior in adolescents⁵. Cui and colleagues (2020) conducted a study that found a positive connection between aggressive behavior and strict discipline from mothers and fathers⁶. Another study revealed that adolescents who experience moral isolation due to having violent parents are directly and indirectly prone to teenage aggression⁷.

Family dynamics have an impact on the behavior of teenagers who display aggression and lack involvement in moral activities⁸. The way families behave can be seen as a contributing element to the aggression and behavior of teenagers⁹. In terms of the emergence of aggression in adolescents, a well-functioning family can disrupt the detrimental pattern of internalizing and externalizing symptoms¹⁰. Unfavorable family dynamics have the potential to alter the positive functioning elements of a family structure, such as delineating familial roles and responsibilities, developing intimate connections, and preventing feelings of shame and accusatory behavior within the family unit¹¹. The functioning of a family is indicative of its overall performance, encompassing exchanges, connections, disagreements, and unity among its members. Additionally, it reveals the structure, reliability, and effectiveness of communication within the family¹².

Research shows that there is a significant relationship between family functioning and fear of negative evaluation and aggression¹³. In this context, research shows that exposure to family violence has a positive association with aggressive behavior in teenagers¹⁴. Bouchard et al. (2023) also examined the relationship between sibling bullying and family functioning in their study. They found that an intrusive

parenting style during sibling conflict was associated with higher levels of sibling bullying (including perpetration and victimization) in childhood¹⁵.

Research findings also indicate that male juvenile delinquents often display highly aggressive behavior due to having violent parents¹⁶. The mental well-being of family members is significantly affected by the overall operation of the family¹⁷. By providing emotional, social, and economic assistance, the family plays a crucial role in maintaining the mental health of its members. The dynamics within the family are pivotal in shaping and preserving the family's mental well-being¹⁷.

There is a significant connection between the mental health of parents and the mental health of their children¹⁸, and the psychological well-being of parents can have an impact on the psychological state and aggression levels of their children¹¹. Mental health does not simply imply the absence of disease but rather encompasses the experience of well-being and the growth of various aspects, such as physical, mental, emotional, and social states¹⁸. Studies indicate that conflicts between parents and students can result in increased aggression among female students¹⁹.

Liu et al. (2021) also found in their study that positive parenting practices, such as the emotional warmth of parents, are associated with less aggression in adolescents²⁰. Research also showed that parental punishment and negative behavior have a positive relationship with children's aggression²¹. The research by Shayegh et al. (2021) also found that among family factors, parental stress, and social acceptance have a direct

influence on aggression²². The results of the study also showed that children's aggression is influenced by family-level factors, such as parental arguments, and at the level outside the home, such as the school environment can be explained²³. The results of the study by Lakhdar et al. (2020) also suggest that the weak bond between parents and the role of gender are potential factors in adolescents' physical aggression²⁴. Furthermore, another study found that children exposed to persistent conflict, aggression, abuse, neglect, domestic violence, and separation are likely to face behavioral and emotional problems²⁵. Foran et al. (2019) also concluded in their study that early parental aggression has an impact on children's mental health and their physical health status in adolescence²⁶. Research has also found that children who have a male caregiver with poor mental health are more likely to have poor overall health²⁷. Violence is the fourth cause of death among adolescents and young people worldwide, and family is one of the most influential factors in this area²⁸. For this reason, it is necessary to examine Family functioning concerning adolescent aggressive behavior. However, no research was found that directly examined the association between Family functioning and adolescent aggressive behavior through the mediation of parental mental health. Therefore, there is a research gap in this area, and the present study is one of the first studies in this area to examine the relationship between Family functioning and adolescent aggressive behavior through the mediation of parental mental health (Figure 1). It examines the question of whether the mental health of the parents has an influence on the parents' performance and the aggressive behavior of the young people.

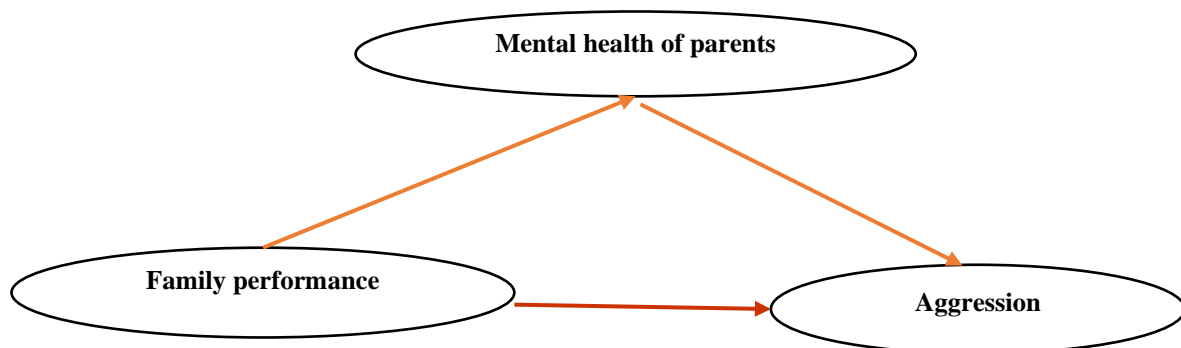


Figure 1. Conceptual framework of the research

Materials and Methods

This descriptive-correlation study utilized path analysis to examine the relationships between research variables. The target population consisted of female students attending junior and senior high schools in Rasht during the 2017-18 academic year. The initial sample size was determined based on the study variables ($n=400$)²⁹. After eliminating incomplete questionnaires, the final sample consisted of 350 female

students. The criteria for inclusion in this study encompassed agreeing to take part, being enrolled in high school grades, and successfully filling out all of the questionnaires. Exclusion criteria included a refusal to continue participating in the study and incomplete questionnaire responses.

To achieve this objective, we utilized the stratified cluster sampling technique to select a district in Rasht randomly. Subsequently, we sought the necessary research permit and

gathered information from the education department regarding the number of high schools exclusively catering to female students. Subsequent arrangements were then coordinated with the respective administrative boards of these schools, during which the purpose and rationale of the research were detailed. Seven high schools were then randomly chosen from the selected district in Rasht. From each of these schools, three classes were chosen at random. The research questionnaires were then distributed amongst the students of these selected classes. Eventually, 350 students were deemed eligible and met the predefined criteria, thus becoming participants in the study.

Bass & Perry Aggression Questionnaire (AQ): The new version of the Aggression Questionnaire, the previous version of which was called the Hostility Questionnaire, was revised by Bass and Perry³⁰. This questionnaire is a self-report instrument that includes 29 statements and four subscales measuring subjects' physical aggression, verbal aggression, anger, and hostility toward each of the statements on a 5-point scale of: completely like me (5), similar to me (4), neither I like nor I don't like (3), rather not like me (2), not at all like me (1). The two statements 9 and 16 are evaluated inversely. The aggression questionnaire has acceptable validity and reliability. In the study by Bass and Perry (1992), the retest coefficient results for four subscales (9 weeks apart) were 0.80 to 0.72 and the correlation between the four subscales was 0.38 to 0.49. Cronbach's alpha coefficient was used to measure the internal validity of the scale. The results showed that the internal consistency of the subscale for physical aggression was 0.82, for verbal aggression was 0.81, for anger was 0.83, and for hostility was 0.80³¹.

Family Assessment Device (FAD): In this study, the Family Functioning Questionnaire was developed by Epstein, et al was created and is designed to measure family function based on the McMaster model³². This model determines the structural, professional and interactive characteristics of the family and defines six dimensions of family functioning: problem solving, communication, roles, emotional companionship, emotional intercourse, behavioral control, and general family functioning. It also shows the family's ability to compromise on family responsibilities on a four-point Likert scale in the form of "strongly agree" (1), "agree" (2), "disagree" (3), and "strongly disagree" (4) score for FAD. Responses are coded 1 to 4, with a higher score indicating unhealthy functioning. In Iranian research (2021), The Cronbach's alpha values for the scales were between 0.78 and 0.94, and the corrected item-total correlation was above 0.30³³.

General health questionnaire-28 (GHQ-28): In addition to questions about personal and social characteristics, it includes four areas: physical symptoms, anxiety symptoms, social dysfunction, and depression symptoms. Each field contains 7 elements³⁴. The scale of the 4-point questionnaire is not at all (with a value of 1), in the normal range (value 2), above the usual level (value 3), and significantly above the usual level (value 4). The score range for each area is 7 to 28 and the total questionnaire score range is 21 to 112. For this test, the cutoff was 25% (based on previous studies). The higher the score, the worse the mental health, and the lower the score, the higher the mental health. Cronbach's alpha, split-half

coefficients and test-retest reliability were 0.9, 0.89 and 0.58 respectively³⁵.

The Sobel test was used to test the significance of mediating variables. The Kolmogorov-Smirnov test was used to check the normality of the distribution of the research variables. Since this test was significant for the research variables, the research variables therefore do not have a normal distribution. Therefore, it is better to use SmartPLS software to run the structural equation model. Finally, the data was analyzed using the SPSS version 27 software and the Smart PLS3 software as well as the structural equation modeling method. Statistical results were considered significant at the 0.05 level.

Results

In this study, 50% of respondents were fathers and 50% were mothers. The participants were divided into three groups depending on their age. Accordingly, 33.4% of the parents were under 40 years old, 44.9% were 40–50 years old, and 21.7% were over 50 years old. The participants were divided into four groups according to their training. Accordingly, 30.6% of parents had an education or less, 37.7% had a master's degree, 17.1% had a bachelor's degree, and 14.6% had a university degree (Table 1).

Table 2 shows the mean family functioning, mental health, and aggression scores and their components.

In Table 3, based on the Pearson correlation coefficient, there was a negative and significant relationship between the Family function variable and anxiety, depression, and aggression variables (Pvalue<0.001) and a positive and significant relationship with the physical health and social function variables (Pvalue<0.001). Likewise, there was a positive relationship between anxiety and depression variables with aggression, and between physical health and social function variables, there was a negative and significant relationship with aggression (Pvalue<0.001). In Table 4, the path and significance coefficients of the realization model can be seen. In this research, the researcher set the bootstrap value to 500.

Based on the results shown in Table 4, and Figure 2, all path coefficients associated with the final model were significant. Based on the standard coefficients in Table 4, the effect of family functioning on aggression was negative and significant ($\beta=-0.162$, Pvalue<0.001). The effect of family functioning on anxiety ($\beta=-0.955$, Pvalue<0.001) and depression ($\beta=-0.904$, Pvalue<0.001) was also negative and significant. Likewise, the effect of family functioning on physical health ($\beta=0.78$, Pvalue<0.001) and social functioning ($\beta=0.886$, Pvalue<0.001) was positive and significant. The variables physical health ($\beta=-0.348$, Pvalue<0.001) and social functioning ($\beta=-0.073$, Pvalue=0.024) also had a negative and significant influence on aggression as mediating variables. At the same time, the variables anxiety ($\beta=0.351$, Pvalue<0.001) and depression ($\beta=0.09$, Pvalue=0.024) as mediating variables had a positive and significant effect on aggression. As a result of this finding, the structural model of the research is confirmed. The researcher used the Sobel test to check the

significance of the mediating variables of the research. This test was calculated using the following formula. In the Sobel test, if the Z-score exceeds 1.96, it can be confirmed that the mediating effect of a variable is significant at the 95% confidence level.

$$Z - value = \frac{a * b}{\sqrt{(b^2 * s_a^2) + (a^2 * s_b^2) + (s_a^2 * s_b^2)}}$$

The z-score for the “Physical Health” variable was -11.13, for the “Social Functioning” variable it was -2.28, for the “Anxiety” variable it was -6.616, and for the “Depression” variable it was -2.307. From the values obtained in the Sobel test, it can be concluded that the mediating variable of the research is significant. Table 5 examined the reliability and validity of the model.

As shown in Table 5, Cronbach's alpha and composite reliability of the variables were above 0.7. Since the AVE

index was greater than 0.5, the convergent validity of the model was confirmed. This confirmed the reliability and validity of the model. In the next step, the researcher examined the divergent validity of the model. The square root of the obtained AVE values was placed in the diameter of the correlation matrix between the factors.

Since the correlation values between the factors do not exceed the values of the matrix diameters, it can be concluded that the divergent validity of the model is also confirmed. Based on the SRMR index, a value of 0.059 was also determined. Since this index was less than 0.8, it indicates a good fit to the model. Likewise, the researcher used a blindfold to check the model's ability to predict the research variable. Values for Q2 or goodness of fit above zero indicate a good fit of the model. The value of Q2 for the “aggression” variable was 0.931, for the “anxiety” variable 0.908, for the “depression” variable 0.814, for the “physical health” variable 0.606 and for the “social functioning” variable 0.783. This confirmed the fit of the model.

Table 1. Descriptive statistics of the variables

Variables	Groups	Frequency	Percent	Total
Parents' education	Diploma and below	107	30.6	350
	Associate degree	132	37.7	
	Bachelor's degree	60	17.1	
	Master's degree and higher	51	14.6	
Parents' gender	Fathers	175	50.0	350
	Mothers	175	50.0	
Parents' age	Under 40 years	117	33.4	350
	Between 40 and 50 years	157	44.9	
	Above 50 years	76	21.7	

Table 2. Descriptive statistics of the variables

	Variables	Mean±SD	Min	Max
Family function	Solve the problem	14.45±3.24	5.00	20
	Relationship	14.59±3.5	6	24
	Roles	18.36±9.0	11	47
	Emotional companionship	16.31±5.46	7	28
	Emotional intercourse	16.02±5.81	8	32
	Behavioral control	15.05±4.04	6	24
	Overall family function	15.92±6.54	9	35
Mental health	Physical health	20.05±3.74	7	24
	Anxiety	13.83±3.50	7	24
	Social function	20.40±4.09	7	28
	Depression	14.10±3.97	7	27
Aggression	Verbal	15.75±4.07	5	25
	Physical	16.97±5.72	5	30
	Anger	16.42±6.08	5	31
	Hostility	16.12±5.94	5	32

Table 3. Correlation matrix between research variables

Row	Variables	1	2	3	4	5	6	Pvalue
1	Family function	-						<0.001
2	Physical health	0.726	-					<0.001
3	Anxiety	-0.934	-0.872	-				<0.001
4	Social function	0.854	0.946	-0.941	-			<0.001
5	Depression	-0.869	-0.920	0.959	-0.945	-		<0.001
6	Aggression	-0.880	-0.934	0.962	-0.961	0.961	-	<0.001

Table 4. Research coefficients and significance of the model

Relationship of variables	Path coefficient	Standard Deviation	Pvalue	T-value	Result
Family function -> Aggression	-0.162	0.043	<0.001	3.764	confirmation
Family function -> Anxiety	-0.955	0.006	<0.001	171.661	confirmation
Family function -> Depression	-0.904	0.007	<0.001	128.794	confirmation
Family function -> Physical health	0.78	0.009	<0.001	88.749	confirmation
Family function -> Social function	0.886	0.008	<0.001	112.084	confirmation
Physical health -> Aggression	-0.348	0.031	<0.001	11.32	confirmation
Social function -> Aggression	-0.073	0.032	0.024	2.265	confirmation
Anxiety -> Aggression	0.351	0.053	<0.001	6.609	confirmation
Depression -> Aggression	0.09	0.039	0.022	2.298	confirmation

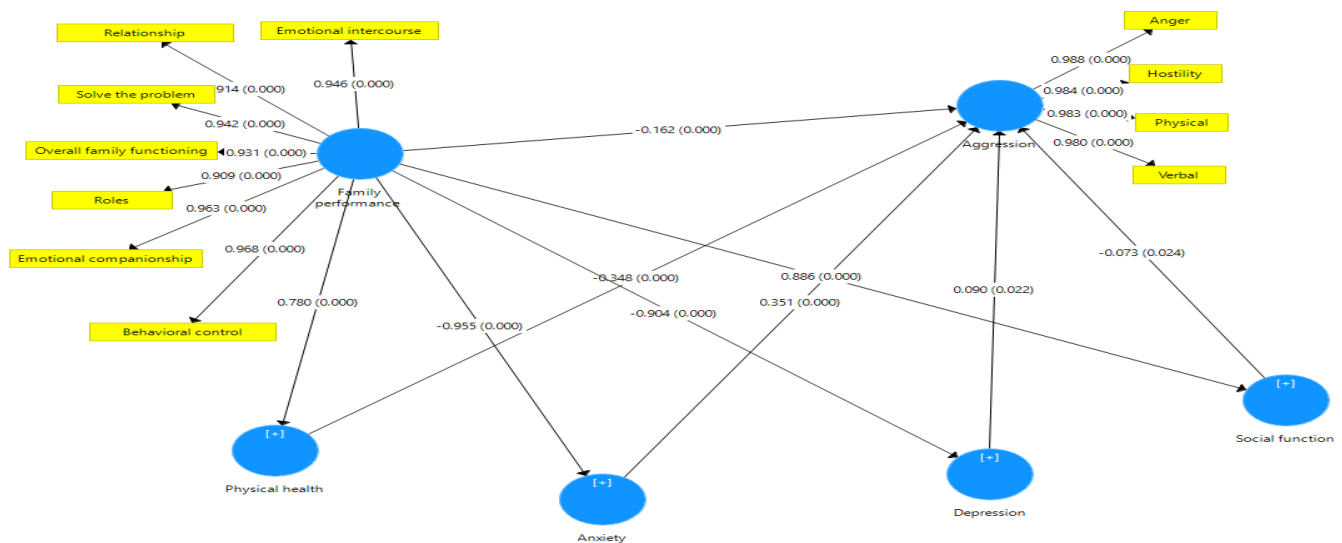


Figure 2. Path coefficients between variables and significance level

Table 5. Reliability and validity of the model

Variable	Cronbach's Alpha	Composite Reliability	AVE
Family function	0.812	0.838	0.88
Physical health	0.881	0.889	0.91
Anxiety	0.793	0.882	0.94
Social function	0.722	0.738	0.95
Depression	0.781	0.787	0.93
Aggression	0.763	0.782	0.76

Discussion

The general aim of the present study was to determine the relationship between family functioning and adolescent aggression with the mediation of parents' mental health. According to the research findings, all the path coefficients in the research model were statistically significant. The results indicated that family performance had a negative and significant impact on aggression, anxiety, and depression. Moreover, family performance had a positive and significant

effect on physical health and social function. Physical health, and social function also had a negative and significant impact on aggression as mediating variables. Additionally, anxiety and depression as mediating variables had a positive and significant effect on aggression. This discovery aligns with the findings of previous research studies conducted by Henriksen et al³, Zhang et al¹⁰, Kim et al¹², and Chang et al¹³.

Growing up in families that exhibit unhealthy behaviors, such as aggression, can have detrimental effects on teenagers,

including the development of depression and the adoption of aggressive behaviors³⁶. Adolescents who experience little emotional support from their families or come from dysfunctional households characterized by persistent conflicts often resort to aggression and substance abuse as coping mechanisms³⁷. The inability of families with weak dynamics to effectively resolve problems and maintain good mental health increases the likelihood of aggressive behavior in the individuals within these families³⁸. Furthermore, individuals who grow up in families lacking affection and warmth tend to view the world as a dangerous place, leading to ruminative thinking, which in turn can predict aggressive behavior³⁹. The functioning of the family also plays a significant role in moderating the extent of ruminative thinking in children and adolescents. Therefore, a family's ability to function well can influence the thought processes of its younger members and potentially deter the development of aggressive behaviors⁴⁰. Parents serve as influential figures in shaping the interactions of teenagers within their peer groups. In cases where families exhibit conflicting behaviors, such as constant conflict, criticism, insults, and lack of interest, there is a heightened risk of adolescents engaging in aggressive behavior as a result⁴¹. Thus, dysfunctional dynamics within the family environment, as exhibited by its members, are strongly associated with both active and reactive aggression displayed by adolescents^{40,41}.

Family violence also undermines the bond between parents and children, particularly in cases of divorce. Children from divorced parents often experience poor health, psychological damage, and behavioral difficulties due to a lack of emotional support, affection, and care from both parents⁶. Additionally, parents who suffer from high levels of anxiety can negatively impact the behavior of their children, often resulting in aggression⁷. If parents exhibit symptoms of depression and anxiety, their children become highly susceptible to psychological dysfunction, problem behaviors, aggression, and other disorders⁸. Exposure to violence within the family environment can also significantly influence the levels of depression and violence experienced by adolescents⁹.

Based on the results of this study, it is apparent that in families with good health and efficient operation, children are motivated to think about how their actions may affect others, especially when it involves being aggressive towards their peers. In families where things are going well, children are less likely to partake in undesirable behaviors such as aggression. This is mainly due to them internalizing moral standards and social principles that shape their conduct. As a result, as family operation improves, the inclination of children to exhibit aggressive tendencies decreases. On the other hand, if children are brought up in an unstable and unsettled family setting, where parents often argue, there will be a lack of closeness among family members. Consequently, the chances of children participating in disruptive actions, such as being aggressive, go up. In such circumstances, insufficient monitoring and guidance from parents, along with consistent rejection, rob children of educational and emotional satisfaction. As a result, there is a rise in behavioral problems, specifically aggression.

This research has a significant limitation in that it is a cross-sectional study, meaning that data was only collected at

one specific time. Another limitation is the use of a self-report questionnaire to assess variables such as family functioning, mental health, and adolescent aggression. Additionally, this study lacked control over certain variables, such as the length and age of marriage, which further adds to its limitations. It is recommended that the utilization of family therapy courses be employed to enhance the skills of families in managing relationships, thereby ultimately improving the mental health of couples. Additionally, the implementation of educational interventions has the potential to enhance the effectiveness of couple therapy by fostering better short-term relationships among participants of family functioning. These interventions can also evaluate the impact of mindfulness and improved parental mental health on the mental well-being of couples while simultaneously reducing instances of child aggression. Given the limitations of this study, which encompassed a specific timeframe and population, it is advisable to conduct further research using a more diverse statistical sample. Researchers are advised to integrate additional techniques, such as carrying out extensive interviews and acquiring compelling data. Furthermore, it is recommended that future studies explore the influence of controlling variables, such as the duration of marriage and the age at which individuals enter into marriage.

As a result, the motivation to achieve played a crucial role in linking the level of academic involvement with both the perception students had of their academic abilities and the amount of support they received from their educational environment. These findings provide an essential basis for creating specific programs that aim to enhance student's academic commitment and foster their motivation to excel.

Ethical Considerations

The study was approved by Ethics Committee of Islamic Azad University - Lahijan Branch (IR.IAU.LAHIJAN.REC.1397.127).

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Conflict of Interest

The authors stated no personal or financial conflicts would affect their work.

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