

Academic Performance and Family Cohesion in a Private Junior High School in the U.S. – Mexico Border

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Abstract

This paper summarizes the results to the research question: what is the relationship between academic performance and family cohesion? Given the various factors to which humans are exposed within their academic journey, the interest arose to analyze how family relationships affect the academic performance. This study was conducted in a private secondary school in Ciudad Juarez, Chihuahua, Mexico. The objective was to determine whether there is an influence of family cohesion on academic performance. Data was collected using the FACES III test, a socio-demographic questionnaire, and the student transcripts. The Pearson correlation test showed that there is a moderate positive correlation between family cohesion and academic performance, $r(128) = .316$, $p < .05$. The relationship between these two variables did not differ in the light of the participants' gender.

Keywords: *academic performance; family cohesion; secondary education*

1. Introduction

1.1 Background

The actors in the field of education, whether they are teachers, students, or parents, face an endless number of difficulties due to the various factors that humans are exposed to, among them are the low levels of academic performance within educational institutions. As socio-cultural beings, this variable depends on important factors such as personal, school and family variables. Today, the importance of family factors is acknowledged, specially the influence of the family in the process of teaching and learning. Previous research suggests that family cohesion is a variable that has a great impact in the academic performance (Escobedo & Valdes, 2011; Iglesias & Vera, 2010; Gutierrez, Camacho, & Martinez, 2007).

Gutierrez et al. (2007) conducted a study with teenagers, which sought to analyze the relationship between academic performance, self-esteem and family functioning, using the Family Adaptation and Cohesion Scales (FACES III), the Self-Concept Assessment Form and the School Assessment Scale as measuring instruments, their findings indicated that there is a relationship between academic performance and family functioning.

Iglesias and Vera (2010) sought to find some psychological, social and demographic factors that were related to academic achievement, for this purpose a sample of 226 students was tested using the Bar-On Emotional Quotient Inventory, the Family Adaptation and Cohesion Scales (FACES III), the Coopersmith Self-Esteem Inventory (CSEI), and the Study Habits Inventory (CASM-85). It was found that young people who have a high level of self-esteem, emotional intelligence, and family cohesion also show positive study habits.

In light of this research, it is very clear that family functioning greatly affects academic performance and family cohesion should not be left aside, as it is one of the three dimensions of family functioning. This research paper focuses on determining the relationship between academic achievement and family cohesion.

1.2 Family Cohesion

There are several factors that promote the retention and success of students at each educational level, all considered that the totalitarian way of education of the person and the influence of everyone's surroundings, school achievement is also related to the personal and social achievement (Arguedas & Jimenez, 2007). Academic achievement is a

multiple caused concept that is explained by different factors that are involved in the learning process and each of them can be internal or external to the student, among these are personal, family, and school factors (Garbanzo, 2007).

In the present study, student family factors were analyzed, which are those related to the family context in which the student develops, as it is important to consider the perception of the family regarding formal education, their level of support and involvement in the learning tasks, the existing communication, and union between its family members. Also, family dynamics play an important role on student adaptability, how they work, and the attitude that parents have towards the school context and school is relevant (Torres & Rodriguez, 2006). Because each family has different characteristics in terms of its structure and relationships, the members that conform the family have a different performance with respect to the contexts in which they operate (Martinez & Alvarez, 2005).

Family functioning are the traits that characterize a family as a group, and explains how they interact and how their members behave, family functioning in turn is divided into some dimensions, depending on the perspective. According to the Theory of Olson, it is divided into adaptability, communication, and cohesion (Sarmiento, Vargas, & Diaz, 2012).

A harmonious coexistence and good communication within a family can be key for all its members, as it must be kept in mind that what happens to the family affects positively or negatively to its members, as the family is an integral system. Molina, Messoulam, and Schmidt (2006, p. 291) define family cohesion as: "... the perceived emotional union by family members." This dimension can occur at high or low levels, the lower the cohesion, the members of the family will tend to feel more disconnected, so when a family is less cohesive its members tend to be less sensitive to the needs of others. According to LaRon (2004) families with low family cohesion are adolescents with difficulties in various social environments; one of them is school and more precisely, their academic performance.

1.3 Academic Performance

The basis of academic performance concept appears mainly to meet labor demands of society, referring to productivity. In the school context, academic performance is perceived through the grades, attendance, promotion, or retention (Cruz, 2006).

Academic achievement is a concept related to the student and the school environment (teacher, school, method), even sometimes people tend to relate only student and teacher; however, achievement does not depend only on these two actors, but on the whole context that revolves around them, because man is a psycho-socio-being and variables related to this conception of human beings positively or negatively affect its behavior and the processes it is confined to. Edel (2003, p.2) states that "probably one of the most important dimensions in the teaching-learning process constitutes the student's academic performance."

The condition of this concept may be due to several variables, such as the characteristics of parents, student motivation, the teaching method, the academic burden on students and many other factors involved in the process of teaching and learning. Ortega, Mendoza and Ballestas (2014, p.36) suggest that "academic achievement is also the result of the complex world around the student, determined by a number of everyday issues such as effort, work capacity, the intensity of study, their skills, abilities, personality, attention, motivation, memory, relational environment, technological resources, among others."

1.3 Research Hypothesis

To further the existing knowledge around the impact of family factors on academic performance, this research aimed to analyze the relationship between academic achievement and family cohesion among a group of adolescent students and separately by gender in a private secondary school in Ciudad Juarez, Chihuahua, Mexico, on the assumption that there is a positive association between family and academic performance.

2. Method

2.1 Participants

A total of 130 adolescent students in a private institution of secondary education in a city of the northern border of Mexico participated in this study, 76 of them female and 54 males, with ages ranging from 12 to 15 years. Both the student parents and the educational institution gave their consent to participate in the study. The method of sample selection was non-randomized convenience sampling.

2.2 Instruments

Data collection instruments were selected based on the objectives set for the study, for which two questionnaires were used, allowing the collection of two different types of data, in addition to the student transcripts.

2.2.1 Socio-demographic Data Questionnaire

This instrument was administered to collect basic demographic data of students, including parental level of education, number of siblings, and time spent with the family.

2.2.2 Family Adaptation and Cohesion Scales (FACES III) Test

A second instrument was the Family Adaptation and Cohesion Scales (FACES III) test in its Spanish version developed by Gomez et al. (1999). This version of the FACES III test was standardized for a Mexican population, and its reliability was measured with a Spearman-Brown quotient of 0.971 and 0.975 (Gomez et al., 1999), because it was applied twice. This test aims to measure family functionality, which is divided into cohesion and adaptability; for the purposes of this study, only those items that correspond to the family cohesion dimension were considered. The test has 20 items and the total score is on a scale from 10 to 50, where 10 represents less cohesion and 50 a greater cohesion.

The administration procedure for the FACES III test was as follows: participants answered the questionnaire according to the way in which they consider their family reacts on a regular basis, participants must read the questions themselves, so that the examiner must abstain from reading them, however questions could be clarified without suggesting the answers.

Once the questionnaires were answered, items corresponding to the family cohesion dimension were added, and the sum obtained was matched to the amplitudes in the tables corresponding to the rating of the instrument in order to find the classification of the participant's family according to the Circumplex Model of Olson, Sprenkle and Rusell.

2.2.3 Student Transcripts

Official student transcripts were used as the instrument for measuring academic achievement, where the overall average obtained by the students in the first two bimonthly reporting periods in the school year was considered. The overall academic average is obtained by adding the grades of the classes the students were taking, divided by the number of classes, with score values ranging from 0 to 10. Although the researchers acknowledge the debate around the reliability of school grades, it is important to recognize that these are the official way of the school to certify student achievement.

2.3 Procedure

A quantitative approach with a transectional-correlational design was used, with two variables. The first variable was academic performance and the second was family cohesion. Family cohesion was used as an independent variable and academic performance as a dependent variable

The research was conducted according to the following steps:

1. A written permission was obtained from the school administrators to carry out the study.
2. A letter of consent was given to each student parents to request their permission to participate in the study.
3. Tests were self-administered in the home classrooms of the participants, as the class sizes were not large and the classrooms conditions adequately provided to do so collectively.
4. Finally, the FACES III test scores and the sociodemographic questionnaire data were entered to the statistical software package SPSS version 22.0 to perform the statistical analysis.

3. Results

The results focus on demonstrating the relationship between the dependent and independent variables. Data analysis was performed using a Pearson correlation coefficient (r) using family cohesion as the independent variable, and academic performance as the dependent variable.

3.1 Correlation between Academic Performance and Family Cohesion

First, each of the study variables was analyzed separately, starting with the dependent variable.

Table 1 shows the descriptive statistics of the variable academic performance, considered as the overall academic average of the participants:

Table 1. Descriptive Statistics for Academic Performance

	<i>N</i>	Lower	Upper	Mean	Std. Dev.
Academic Performance	130	7.40	9.90	9.08	.56
<i>N</i>	130				

Data collected by the authors

The lowest average obtained by the students in the sample was higher than the minimum passing grade (6.00), and the highest obtained by the sample is equal to 9.90. The average grade was equal to 9.08, so the academic performance of this sample can be considered as high.

Table 2 presents the descriptive statistics of the family cohesion variable, considered as the score obtained or sum of the items of the FACES III test:

Table 2. Descriptive Statistics for Family Cohesion

	<i>N</i>	Lower	Upper	Mean	Std. Dev.
Family Cohesion	130	23.00	50.00	40.08	6.30
<i>N</i>	130				

Data collected by the authors

The lowest family cohesion score obtained by the students of the sample using the FACES III scale was higher than the minimum scale score (20), and the highest score obtained by the sample was 50. The average score was 40.08, which means that the family cohesion of this sample is moderate.

Subsequently, the relationship between academic performance and family cohesion was analyzed. Table 3 shows the results of the analysis of the correlation between academic performance and family cohesion.

Table 3. Correlation between Academic Performance and Family Cohesion

		Academic Performance	Family Cohesion
Academic Performance	Pearson's correlation	1	.316 **
	<i>Sig.</i>		.000
	<i>N</i>	130	130
Family Cohesion	Pearson's correlation	.316 **	1
	<i>Sig.</i>	.00	
	<i>N</i>	130	130

Data collected by the authors

Pearson's correlation was obtained to estimate the relationship between academic performance and family cohesion, which revealed that there is a moderate positive correlation between family cohesion and the academic performance of the participants, $r(128) = .316$, $p < .05$, and that family cohesion statistically explained 10% of the variability of academic performance. Although it is not possible to establish a causal relationship, given that the correlation obtained is positive, it can be said that the greater the family cohesion, the better academic performance is observed.

To further the analysis of the data collected and because several studies have confirmed that gender is a factor that affects academic performance, such as the one by Calero, Choi and Waisgrais (2010), it was decided to inquire whether the perception of the analyzed sample regarding family cohesion varied from one gender to another, and if this variation existed, whether it was related or not to the academic performance of the students.

3.2 Correlation of Academic Performance and Family Cohesion by Gender

The variables of the study were analyzed independently, as a first point, when analyzing the variable academic performance, we found that male students obtained some better grades than female students (See Table 5), because the lowest average obtained by them (8.00) was found to be higher than the obtained by females (7.40) (See Table 4) except for the maximum, which in the case of them was equal to 9.75 and in the female equal to 9.90, however the

average of the males turned out to be higher, that is to say 9.13, while for females it was 9.04.

Table 4. Descriptive Statistics for Academic Performance in Women

	<i>N</i>	Lower	Upper	Mean	Std. Dev.
Academic Performance	76	7.40	9.90	9.04	.61
<i>N</i>	76				

Data collected by the authors

Table 5. Descriptive Statistics for academic Performance in Men

	<i>N</i>	Lower	Upper	Mean	Std. Dev.
Academic Performance	54	8.00	9.75	9.13	.48
<i>N</i>	54				

Data collected by the authors

Subsequently, the family cohesion variable was analyzed separately for both male and female students. The lowest family cohesion score obtained by females in the sample using the FACES III scale (23) was higher than the minimum possible score (10). And the highest score obtained by them was 50. The mean scores were equal to 39.14, which represents that the family cohesion of this part of the sample is moderate (See Table 6).

Table 6. Descriptive Statistics for Family Cohesion in Women

	<i>N</i>	Lower	Upper	Mean	Std. Dev.
Family Cohesion	76	23.00	50.00	39.14	6.84
<i>N</i>	76				

Data collected by the authors

Descriptive statistics of family cohesion in male students in this sample indicate that the low score obtained by them using the FACES III scale (27) was greater than the minimum scale score and the highest score obtained by them was 49. Mean scores were equal to 41.39, which means that the family cohesion of this part of the sample is moderate as well (See Table 7).

Table 7. Descriptive Statistics for Family Cohesion in Men

	<i>N</i>	Lower	Upper	Mean	Std. Dev.
Family Cohesion	54	27.00	49.00	41.39	5.23
<i>N</i>	54				

Data collected by the authors

Comparing the means of FACES III scores in men and women, it is possible to observe that family cohesion is slightly higher in men than in women; however, both groups are located within a moderate level of cohesion, which is considered suitable by Pampliega, Castillo, Galindez, and Sanz (2006).

As a final point, we proceeded to perform the correlation between the dependent variable and the independent variable in light of the gender, and the correlations behaved as follows:

There is a positive correlation between family cohesion and academic performance in the female group, $r(74) = .309$, $p = .007$, and family cohesion statistically explained 9.5% of the variability of women's academic performance (See Table 8).

Table 8. Correlation between Academic Performance and Family Cohesion in Women

		Academic Performance	Family Cohesion
Academic Performance	Pearson's correlation	1	.309 **
	<i>Sig.</i>		.007
	<i>N</i>	76	76
Family Cohesion	Pearson's correlation	.309 **	1
	<i>Sig.</i>	.007	
	<i>N</i>	76	76

Data collected by the authors

In the case of men, Table 9 shows the results of the relationship between academic performance and family cohesion. Similar to that found for the women's group, the Pearson test results for men show that there is a positive correlation between family cohesion and academic achievement, $r(52) = .302$, $p = .026$, with family cohesion statistically explaining 9.1% of the variability of academic performance in men.

Table 9. Correlation between Academic Performance and Family Cohesion in Men

		Academic Performance	Family Cohesion
Academic Performance	Pearson's correlation	1	.302 **
	<i>Sig.</i>		.026
	<i>N</i>	54	54
Family Cohesion	Pearson's correlation	.302 **	1
	<i>Sig.</i>	.026	
	<i>N</i>	54	54

Data collected by the authors

Since Pearson's correlation coefficients between academic performance and family cohesion are practically equivalent for women, $r(74) = .309$, and men, $r(52) = .302$, it can be said that there is no difference in the family cohesion-academic performance relationship in the light of gender and that, as demonstrated by the results of the correlation for all participants in general, regardless of gender, greater family cohesion, higher academic performance.

4. Discussion

The study evaluated the relationship between academic achievement and family cohesion in secondary school students. The results are in line with what has previously been found in similar studies, that is, that family cohesion is related to academic performance (Gutierrez et al., 2007).

The fact that the relationship found in this study between family cohesion and academic performance is moderate indicates that the latter variable depends on a multitude of personal, institutional, and family factors (Garbanzo, 2007), and highlights the difficulty for educational research to examine all these variables in isolation to determine more clearly the individual contribution of each one of them.

Moreno and Chauta (2012) refer that a teenager who belongs to a family with a distant relationship can have effects on the activities that they perform; in the socio-affective level, it can be translated into maintaining sexual relationships at an earlier age, consuming substances such as alcohol or drugs and, at the school level, simply damaging the role that they play. When family dynamics are not healthy not only that group is damaged, but the effects expand to the contexts or institutions to which the members of the family attend, so that with what is found in the present investigation confirms what the authors referred earlier, that is, the lower the family cohesion, the lower the academic performance and vice versa.

Finally, no differences were found among the relationship between family cohesion and academic performance in the

light of the gender of the participants, so it is considered that for both female students and male students, the cohesion between their families is equally important for their academic performance.

5. Conclusions

Family functionality is only one of several family factors associated with student academic performance and, according to Olsen, Sprenkle and Russell's theory, this factor is divided into three dimensions: adaptability, communication, and cohesion (Pampliega et al., 2006). The results found in the present study confirm that the degree of cohesion in the family is associated with the academic performance of the students, so it is undoubtedly necessary to delve into the study of each of the variables that predict academic performance to clarify their effect on the students.

The authors consider pertinent that the education system thoroughly investigates, analyzes, and implements the necessary actions to improve the academic performance of its students, among which is informing, training and raising awareness about the various factors that impact academic performance among all educational actors: supervisors, principals, teachers, counselors, and educational assistants, in this case more specifically about family cohesion, and based on the above, creating multidisciplinary work programs, involving psychologists, counselors, teachers, social workers, and all the professionals needed to raise awareness and intervene students and their families to mitigate those factors that impact academic performance.

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