The Correlation of Emotional and Behavior Problems with Academic Achievement

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العلاقة ما بين المشكلات الانفعالية والسلوكية والتحصيل الأكاديمي

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منطقة مادسن التعليمية – ولاية وسكانسن – الولايات المتحدة الامريكية
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ملخص: استهدفت الدراسة الحالية التعرف على العلاقة بين المشكلات الانفعالية والسلوكية والتحصيل الأكاديمي، كذلك التعرف على الفروق في درجة المشكلات الانفعالية والسلوكية ما بين الطلبة ذوي التحصيل الأكاديمي المنخفض، المتوسط، والمرتفع. تكونت عينة الدراسة من (1406) طالباً وطالبة من دولة الإمارات العربية المتحدة. أشارت النتائج إلى وجود علاقة سلبية ذات دلالة ما بين المشكلات الانفعالية والسلوكية والتحصيل الأكاديمي. كما أظهرت النتائج أن الطلاب ذوي التحصيل الأكاديمي المنخفض أظهروا درجة أعلى من المشكلات الانفعالية والسلوكية من الطلاب ذوي التحصيل الأكاديمي المتوسط أو ألمرتفع من جهة وذوي التحصيل المتوسط أظهروا درجة أعلى من المشكلات من الطلاب ذوي التحصيل ألمرتفع من جهة أخرى.

الكلمات المفتاحية: المشكلات السلوكية والانفعالية، التحصيل الأكاديمي

Introduction

Academic achievement is important for a child's development and the quality of their future life. Students who thrive in school are more likely to transition successfully into adulthood and attain occupational and financial success. Therefore, a student's academic achievement has been a concern for parents, educators, mental health specialists, and policy makers. Many factors influence a student's academic achievement; among these factors is a student's emotional and behavioral problem. Numerous studies demonstrate that students' social skills and emotional and behavioral problems have a significant effect on their daily adaptive behavior, academic performance, and the quality of their future life (Verma, Singh, Gupta & Gupta, 2001; Feldman, Hancock, Rielly, Minnes, & Cairns, 2000; Gunter, Coutinho, & Cade, 2002; Merino, Livia, & Digz, 2006). Low academic achievement also is a significant risk factor for emotional and behavioral problems (Nayak, & Jahan, 2010).

Social and emotional skill deficits limit the learning opportunities and social interactions with their peers for all children, with or without disabilities; in most cases these deficits impact their psychological adjustment as adolescents and adults (Feldman, Hancock, Rielly & Minnes, & Cairns, 2000; Pastor, Reuben, & Duran, 2012). Also, the academic achievement of children with emotional disturbances is significantly lower than what is expected from their age group (Cullinan, Evans, Epstein, & Ryser, 2003; Reid, Gonzalez, Nordress, Trout, & Epstrin, 2004; Nelson, Benner, Lane, & Smith, 2004; Hinshaw, 1992).

More specifically, Hossain (2013) investigated the relationship between emotional and behavioral problems on one hand, and student's cumulative grade point average on the other, among Bengali students (ages 14-15). The findings revealed that emotional symptoms, conduct problems, hyperactivity/inattention, peer problems, total difficulties score associated negatively with academic achievement.

Soomro and Clarbour (2012) investigated the relationship between malevolent aggression and social anxiety, on one hand, and academic achievement on the other hand, among Pakistani children in the secondary grade (ages 12-15). Their findings revealed that malevolent aggression associated negatively with academic achievement among males, whereas there was no significant correlation between malevolent aggression and academic achievement among females. The results also indicated that there

was no significant correlation between social anxiety and academic achievement among males, females, or the total sample.

Al- Zoubi (2011) examined the differences between non-gifted and gifted 10th grade Jordanian students as to verbal and physical aggression. He found that non-gifted students exhibited more verbal and physical aggression than the gifted students.

Yousefi et al. (2010) investigated the relationship between test anxiety and academic achievement among Iranian students (ages 15-19). Their findings revealed that the relationship between test anxiety and academic achievement was significantly negative.

Al-Qaisy (2011) investigated the relationship between depression and anxiety, on one hand, and academic achievement on the other, among Jordanian college students (ages 18-25). The results indicated that there was a significantly negative correlation between depression and academic achievement, while there was a significantly positive correlation between anxiety and academic achievement.

In a longitudinal study Flynt (2008) examined the effect of students' classroom behavior on math and reading achievement in first, third, and eighth grades in the U.S.A. Findings indicated a significantly positive relationship between positive behaviors and achievement in math and reading, while the relationship was significantly negative between problem behaviors (distractibility, hostility, introversion, & dependence) and math and reading achievement. Furthermore, the results showed that the teachers' rating of classroom behavior using the classroom behavior inventory were better predictors of reading and math achievement than intelligence in first, third, and eighth grades.

Another longitudinal study conducted by Brennan, Shaw, Dishion, and Wilson (2012) indicated that children's scores in aggression and hyperactivity-impulsivity at age 2-3 (from U.S.A.) were negatively correlated with their academic skills at age 7.5, whereas there were no significant relationships between scores in inattention or oppositional behavior at age 2-3 and their academic skills at age 7.5.

Furthermore, Malinaauskiene, Vosylis, and Zukauskiene (2011) in a longitudinal study investigated the relationship between problem behaviors (measured by Achenbach –youth self-report) and academic achievement among secondary school students (age 12, followed for three years) from Lithuania. The findings showed that males and females who exhibited higher levels of delinquent behavior or psychosomatic complaints had lower academic achievement. However, there was no significant impact of

anxiety/depression, social withdrawal, and aggression on academic achievement.

Finally, King et al. (2005) investigated the relationship between depression, anxiety, physical aggression, conduct, and hyperactivity/inattention, on one hand, and student's academic achievement on the other, among Canadian students (ages 6-11). Their findings revealed that only hyperactivity/inattention among the emotional and behavior domains mentioned above associated negatively with academic achievement.

Overall the previous literature provides evidence that emotional and behavioral problems influence students' ability to perform their potential academically. The United Arab Emirates has been in the process of reforming its education system and significant efforts have been made toward achieving this goal. Little if any has formally and systemically addressed the impact of students' emotional and behavioral problems on their academic achievement, despite the tremendous efforts and resources have been invested in the education system. Additionally, little if any research has focused on the relationship between emotional and behavioral problems, and students' academic achievement in the United Arab Emirates.

The aims of the current study were twofold: a) to examine the relationship between emotional and behavioral problems and students' academic achievement, and b) to investigate the differences in the degree of emotional and behavioral problems among students across academic achievement levels (low, average, & high).

Method

Sample

A total of 1406 students with an age range from 6 to 19 years (679 males and 727 females) from three grade levels (659 cycle one, 431 cycle two, and 316 secondary stage) participated in this study from three school districts (525 Al-Ain, 508 Sharjah, and 369 Fujairah) in the U.A.E. The sample was drawn using the following sampling method: first, three school districts were selected randomly from the U.A.E's 10 school districts. The three districts selected were Al-Ain, Sharjah, and Fujairah. Second, schools from each district were selected randomly. Third, classes were selected randomly from each school, and finally, 5 students selected randomly from each classroom to participate in the study.

Measures

Emotional and behavioral problems

This continuous variable was defined as students' scores in each domain (aggression/conduct problems, learning problems, psychosomatics, hyperactivity, and depression/ anxiety), and total problem score as measured by the teacher's emotional and behavior problems scale (TEBPS). The scale was developed by Hussien, Albaili, and Sartawi (2014) for the UAE based on the literature of the psychopathology among children and adolescents, the approaches of identifying and diagnosing emotional and behavior problems, and a number of emotional and behavioral problems scales.

The TEBPS consists of 65 items that measure emotional and behavioral problems among children and adolescents. The teacher rates the student on each item indicating how often she/he exhibit specific problem behaviors using a 4-point rating scale ranging from 1= never, 2 = sometimes, 3 = often, and 4 = almost always.

Content validity: the content validity of the TEBPS was examined by 10 experts who hold PhDs in education. All the experts were Arabs and faculty members at the UAE University who are knowledgeable about the culture, educational system, and school setting in the UAE. The experts' review revealed that the items were written in clear and precise language, measured the target domain and observable in the school environment confirming the content validity of the scale.

Factor structure: expletory factor analysis (EFA) was conducted to examine the factor structure of the EBPS. The extraction method (maximum-likelihood), eigenvalues greater than 1, and the scree test and oblique rotation (direct oblimin, delta = 0) (Costello & Osborne, 2005; Ford, MacCallum &Tait, 1986) were performed on the participants' raw scores on all items of the EBPS. Parallel analysis also was utilized to determine the number factors.

The results of the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO =. 98) and the determinant correlation matrix (determinant = 1.14E-021) indicated that the sample size and the correlation matrix were suitable for factor analysis (Field, 2005). The results of the EFA revealed eight eigenvalues greater than one, the scree test indicated five underlying factors, and the results of the parallel analysis revealed five factors. The scree test is a more accurate method than eigenvalues greater than one criterion (Russell, 2002; Costello & Osborne, 2005). However, parallel analysis is superior to the previous two methods and typically yields optimal solutions to the number of components problem (Basto & Pereira,

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2012; O'Connor, 2000). Based on these results, five underlying factors were selected as fixed factors to be extracted.

The results of the EFA revealed that the 5 factors accounted for 55.26% of the total variance: 37.03%, 7.32, 6.07%, 2.49%, and 2.36%, respectively. The first factor consisted of 21 items reflecting the aggression/conduct problems, the second factor consisted of 19 items reflecting the learning problems, the third factor consisted of 8 items reflecting the psychosomatics problems, the fourth factor consisted of 5 items reflect hyperactivity, and the fifth factor consisted of 12 items reflect depression/anxiety.

The following are the domains and their definition:

1. Aggression/conduct problems: this scale measures the verbal or physical threat towards others, participation in inappropriate social behavior, violation of rules and instructions, and the destruction of public property.
2. Learning problems: this scale measures attention problems and academic problems. The items measure distractibility, inability to maintain concentration sufficiently, and difficulties in understanding or performing the academic tasks expected at the student's grade level.
3. Psychosomatic: this scale measures the oversensitivity and complaints about insignificant physical discomfort.
4. Hyperactivity: this scale measures over activity, impulsivity, and acting without thinking.
5. Depression/anxiety: this scale measures feeling sad or unhappy, stressed, a tendency to be worried, fearful, and tense regarding imagined or real matters.

Discriminant validity: the discrimination validity of the TEBPS was investigated by comparing the scores of 350 children without disabilities and the scores of 360 children with intellectual disabilities in each domain and the total score of the EBPS. The findings showed that children with intellectual disabilities scored significantly higher than children without disabilities in all the domains and the total score of the TEBPS.

Reliability: the internal consistency Cronbach's alpha ranged from (.79) to (.97), and the test-retest reliability coefficients ranged from (.77) to (.89) as shown in table 1. All the coefficients values exceed the conventional minimum of .7 (Nunnally and Bernstein 1994) and demonstrate high internal consistency and levels of temporal stability.

Table 1

Test-Retest Reliability Coefficients and Internal Consistency

Coefficients of the TEBPS

Factors	Number of Items	Test Retest Reliability (N=80)	Cronbach's Alpha (N=1554)
Aggression/Conduct	21	.863	.964
learning problems	19	.891	.963
Psychosomatics	8	.772	.794
Hyperactivity	5	.779	.834
Depression/Anxiety	12	.771	.880
Total	65	.888	.974

Academic achievement

In most of the studies the grade point average was used to measure academic achievement (Mushtaq & Khan, 2012). This continuous variable was defined as students' grade point average in all school subjects reported in students' progress report cards.

Academic achievement performance level

This categorical variable involved three levels: Low academic achievement (all the raw scores equal to or less than 25th percentile), average academic achievement (all the raw scores higher than 25th percentile and less than 75th percentile), and high academic achievement (all the raw scores equal to or higher than 75th percentile). The percentile ranks were calculated based on all the students' academic achievement.

Data analysis

The following statistical procedures were employed to analyze the data:

1. Descriptive statistics, which involved means and standard deviations, for each domain (aggression/conduct problems, hyperactivity, learning problems, depression/ anxiety, and psychosomatic), and total problems across academic achievement level scores were calculated.

2. One-way multivariate analysis of variance was performed to examine the main effect of academic achievement levels (low, average, & high) on the students' scores in the five domains. In addition, one-way analysis of variance was performed to examine the main effect of academic achievement levels (low,

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average, & high) on the students' total problem scores. Then Tests of Between-Subjects Effects was computed.

3. Scheffe test was used to examine the significance of the differences between pairwise mean scores or pairwise mean differences of a differences

4. Partial correlation coefficients between participants' scores on aggression/conduct problems, hyperactivity, learning problems, depression/ anxiety, psychosomatics, and total problem scores on one hand, and students' academic achievement on the other, were computed with controlling of students' age and gender effect.

Results

Data concerning emotional and behavioral problems and academic achievement were collected. The IBM SPSS Statistics 20 was used to analyze the data in the form described earlier.

Descriptive statistics

Means, standard deviations, and standard error for the emotional and behavioral scales according to students' academic achievement levels were calculated and presented in Table 2 and figure 1. The means in every emotional and behavioral problem scale appears to decrease with increasing students' academic achievement levels.

Table 2
Means, Standard Deviations, and Standard Error for Emotional and Behavior Problem Scales According to Achievement Levels

Emotional And Behavior Scales	Achievement Level	N	Mean	Std. Deviation	Std. Error
Aggression /Conduct	Low	345	35.88	15.170	.817
	Average	668	29.97	11.761	.455
	High	377	24.92	8.067	.415
	Total	1390	30.07	12.516	.336
Hyperactivity	Low	345	9.69	3.927	.211
	Average	668	8.34	3.408	.132
	High	377	7.44	3.105	.160
	Total	1390	8.43	3.559	.095
Learning	Low	345	43.52	14.430	.777

problems	Average	668	31.08	11.568	.448
	High	377	22.68	5.462	.281
	Total	1390	31.89	13.448	.361
Depression / Anxiety	Low	345	20.17	6.922	.373
	Average	668	17.82	6.051	.234
	High	377	15.95	4.882	.251
	Total	1390	17.90	6.182	.166
Psychosomatic	Low	345	10.19	2.986	.161
	Average	668	9.80	2.882	.112
	High	377	9.16	2.361	.122
	Total	1390	9.72	2.801	.075
Total Problems	Low	345	119.46	35.744	1.924
	Average	668	97.00	29.585	1.145
	High	377	80.15	20.231	1.042
	Total	1390	98.00	32.385	.869

Estimated Marginal Means of Total Problems
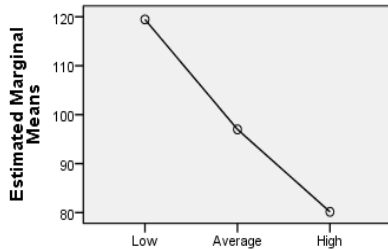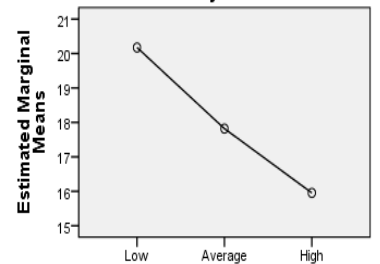

Estimated Marginal Means of Aggression & Conduct
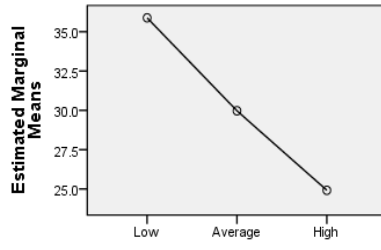
Estimated Marginal Means of Learning problems

Estimated Marginal Means of Psychosomatic

Estimated Marginal Means of Hyperactivity
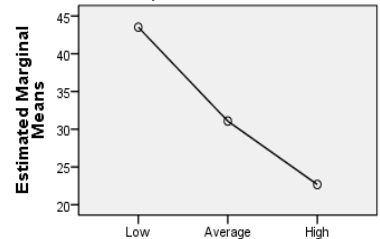
Estimated Marginal Means of Depression & Anxiety
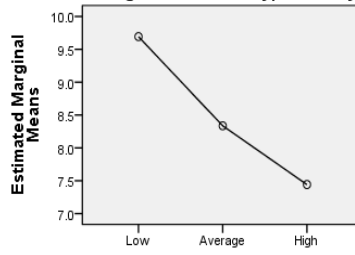
Figure1. Represents Mean of Students' Scores on All Emotional and Behavior Problems across Academic Achievement Performance Levels

Relationship between Emotional and Behavioral Problems and Academic Achievement

The relationship between emotional and behavioral problems and academic achievement was investigated by computing the partial correlation coefficients between every emotional and behavioral problems domain on one hand, and grade point average on the other for school age children (gender and age effect were controlled). The results of this analysis are shown in Table 3. These results show significantly negative correlations ($p < 0.05$) between every emotional and behavioral problem scale and total problems on one hand, and academic achievement on the other.

Table 3
Partial Correlation Coefficients between Emotional Behavioral
Problems and Academic Achievement (N= 1370)

Controlled Variables Age & Gender	Scales	r
	Aggression / Conduct	-.333*
	Hyperactivity	-.236*
	Learning Problems	-.581*
	Depression /Anxiety	-.247*
	Psychosomatic	-.134*
	Total Problems	-.456*

*P< 0.01

The Effect of Academic Achievement Levels on Emotional and Behavioral Problems

One-way (academic achievement levels) multivariate analyses of variance were performed on the students' scores in the five domains, and one way ANOVA for the total problem score. Significant multivariate main effects for the academic achievement level were obtained, Wilks' λ = .659, F (10, 2766) = 64.198 p <.001, for the five domains. Then, tests of between-subjects effects for each emotional and behavioral domain, and post-hoc analysis were computed. The results of the tests of between-subjects effects presented in table 4 and one way ANOVA in table 5 indicated that the academic achievement levels had

significant (P < .05) main effect on every emotional and behavioral domain and the total problems.

Table 4

Tests of Between-Subjects Effects for the Academic Achievement Levels on the Five Domains

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Aggression & Conduct	21680.573	2	10840.286	76.754	.000
	Hyperactivity	924.279	2	462.140	38.444	.000
	Learning Problems	79084.279	2	39542.140	318.655	.000
	Depression/ Anxiety	3215.856	2	1607.928	44.728	.000
	Psychosomatic	197.811	2	98.905	12.817	.000
Intercept	Aggression/ Conduct	1169021.273	1	1169021.273	8277.166	.000
	Hyperactivity	92051.340	1	92051.340	7657.410	.000
	Learning Problems	1342470.501	1	1342470.501	10818.457	.000
	Depression/ Anxiety	412966.005	1	412966.005	11487.452	.000
	Psychosomatic	120490.106	1	120490.106	15614.623	.000
Academic Level	Aggression & Conduct	21680.573	2	10840.286	76.754	.000
	Hyperactivity	924.279	2	462.140	38.444	.000
	Learning Problems	79084.279	2	39542.140	318.655	.000
	Depression/ Anxiety	3215.856	2	1607.928	44.728	.000
	Psychosomatic	197.811	2	98.905	12.817	.000
Error	Aggression/ Conduct	195892.230	1387	141.234		
	Hyperactivity	16673.420	1387	12.021		
	Learning Problems	172113.880	1387	124.091		
	Depression/ Anxiety	49861.697	1387	35.949		
	Psychosomatic	10702.774	1387	7.716		
Total	Aggression/Conduct	1474219.273	1390			
	Hyperactivity	116388.549	1390			
	Learning Problems	1664458.237	1390			
	Depression/ Anxiety	498386.794	1390			
	Psychosomatic	142238.487	1390			
Corrected Total	Aggression/ Conduct	217572.802	1389			
	Hyperactivity	17597.699	1389			
	Learning Problems	251198.159	1389			
	Depression/Anxiety	53077.554	1389			
	Psychosomatic	10900.585	1389			

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Table 5
Results of the One Way ANOVA for the Effect of the Academic Achievement
Levels on the Total Problems

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	279609.952[a]	2	139804.976	164.722	.000
Intercept	12482116.976	1	12482116.976	14706.785	.000
Academic Level	279609.952	2	139804.976	164.722	.000
Error	1177191.121	1387	848.732		
Total	14807343.270	1390			
Corrected Total	1456801.074	1389			

Results of the Post Hoc Test for the Effect of the Academic Achievement Levels on Each Emotional and Behavioral Problem

Scheffe test was used to examine the significance of the differences between pairwise mean scores among students across academic achievement levels for every analysis of variance which showed significant main effect. The results were summarized in table 6. These results indicated that the low academic achievement students exhibited significantly ($P < .05$) higher emotional and behavioral problems in every domain than the average academic achievement students or high academic achievement students, with exception of the psychosomatic domain where there was no significant difference ($P > .05$) between low academic achievement students and the average academic achievement students .

Furthermore, the results indicated that the average academic achievement students exhibited significantly ($P < .05$) higher emotional and behavioral problems than the high academic achievement students in every domain.

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Table 6
Results of the Post Hoc Test for the Effect of the Academic
Achievement Level on the Students' Scores in Each Emotional and
Behavioral Problems Domain and the Total Problems

Dependent Variable	Academic Achievement Level	Mean Difference (I-J)	Sig.
Aggression / Conduct	(I)Low – (J)Average	5.912*	.000
	(I)Low – (J)High	10.967*	.000
	(I)Average – (J)High	5.055*	.000
Hyperactivity	(I)Low – (J)Average	1.357*	.000
	(I)Low – (J)High	2.251*	.000
	(I)Average – (J)High	.894*	.000
Learning Problems	(I)Low – (J)Average	12.443*	.000
	(I)Low – (J)High	20.840*	.000
	(I)Average – (J)High	8.397*	.000
Depression / Anxiety	(I)Low – (J)Average	2.355*	.000
	(I)Low – (J)High	4.220*	.000
	(I)Average – (J)High	1.865*	.000
Psychosomatic	(I)Low – (J)Average	.388	.109
	(I)Low – (J)High	1.027*	.000
	(I)Average – (J)High	.639*	.002
Total Problems	(I)Low – (J)Average	22.455*	.000
	(I)Low – (J)High	39.306*	.000
	(I)Average – (J)High	16.851*	.000

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Discussion

The aim of the current study was to examine the relationship between emotional and behavioral problems and academic achievement among school age children, and to investigate the differences in the degree of emotional and behavior problems among students across academic achievement performance levels (low, average, & high). A total of 1406 students participated in this study. Teachers' rated the students on TEBPS and the students' grade point average in all school subjects collected. The data was analyzed using descriptive statistics, analysis of variance, Scheffe test, and partial correlation.

The findings of this study showed that aggression/conduct, hyperactivity, learning problems, depression / anxiety, psychosomatic, and total problems associated negatively with academic achievement. The results also demonstrated that the low academic achievement students exhibited significantly higher emotional and behavioral problems in every domain than the average or high academic achievement students, with exception of the psychosomatic domain where there was no significant difference between low academic achievement students and the average academic achievement students. Furthermore, the results indicated that the average academic achievement students exhibited significantly higher emotional and behavioral problems than the high academic achievement students in every domain.

The results of this study are similar to the findings of previous studies with regard to conduct problems (Al- Zoubi, 2011; Brennan, Shaw, Dishion, & Wilson, 2012; Hossain , 2013; & Soomro, & Clarbour, 2012), hyperactivity / inattention (Brennan, Shaw, Dishion, & Wilson, 2012; Flynt, 2008; & King et al., 2005), psychosomatic (Malinaauskiene, Vosylis, & Zukauskiene, 2011), depression (Al-Qaisy, 2011; & Flynt, 2008), and anxiety (Yousefi et al., 2010).

However, other researchers reported insignificant relationship between anxiety/depression, aggression (Malinaauskiene, Vosylis, & Zukauskiene, 2011; & King et al., 2005); inattention (Brennan, Shaw, Dishion, & Wilson, 2012), and anxiety (Al-Qaisy, 2011; & King et al., 2005) on one hand, and academic achievement on the other.

Despite the consistency or inconsistency of the findings in this study versus previous studies, the present study provides strong empirical evidence that the students' emotional and behavioral problems had negative

impact on their academic achievement. In addition, the findings demonstrate that students with low academic performance exhibited higher emotional and behavioral problems.

These findings highlight the need of addressing students' emotional and behavioral problems and mental health through educational policies, curriculum and teacher training programs. More specifically, systematic and regular screenings to identify students with academic and emotional and behavioral problems as early as possible and providing them with the appropriate instruction and intervention is critical. Early interventions eliminate or at least minimize the negative impact of emotional problems and learning or academic difficulties. Finally, early interventions may prevent developing secondary difficulties or disabilities.

Acknowledgment

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The Correlation of Emotional and Behavior Problems with Academic Achievement

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Abstract: The aim of the current study was to examine the relationship between emotional and behavioral problems and academic achievement among school age children, and to investigate the differences in the degree of emotional and behavior problems among students across academic achievement performance levels (low, average, & high). The sample involved (1406) school age children from the UAE. The findings revealed that aggression/conduct; hyperactivity; learning problems; depression / anxiety; psychosomatic; and total problems, all associated negatively with academic achievement, and the degree of these emotional and behavior problems decreased with an increasing academic achievement level (low, average, & high).