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Relations between School Performance and Depressive Symptoms in Spanish Children

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Abstract

Introduction. Despite data showing the relationship between depression and decreased school performance, there is a lack of studies with Spanish children. The objective of this research is to examine school performance as a function of depression and gender.

Method. Participants were 658 Spanish children aged between 8 and 12 years, 49.6 % male, who completed the Child Depression Inventory and reported their grades (the number of courses evaluated as Excellent and Failure) and the number of school years they had repeated.

Results. The results of Multivariate Analysis of Variance show that children with depressive symptoms have poorer school performance (more courses evaluated as Failure, fewer courses evaluated as Excellent, and more repeated grades) than those without symptoms. Differences by gender were only found in the number of repeated grades, higher in girls than in boys. None of the variables studied showed differences in the interaction of depressive symptoms and gender.

Discussion and Conclusion. Early detection of depressive symptoms at schools is needed in order to prevent problems in academic performance.

Keywords: depressive symptoms, school performance, descriptive study, childhood.

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Relación entre el rendimiento escolar y la sintomatología depresiva en niños españoles

Resumen

Introducción. A pesar de los datos que evidencian la relación entre la depresión y la disminución del rendimiento escolar, se carece de estudios llevados a cabo con población infantil española. El objetivo del presente trabajo es examinar el rendimiento escolar de los niños españoles en relación con la depresión infantil y el sexo.

Método. Participaron 658 niños españoles de edades comprendidas entre 8 y 12 años, el 49.6% varones, que completaron el Inventario de Depresión Infantil e informaron de sus calificaciones (número de suspensos y número de sobresalientes) y del número de veces que habían repetido curso.

Resultados. Los resultados del Análisis Multivariado de la Varianza muestran que los niños con sintomatología depresiva tienen un peor rendimiento escolar (más suspensos, menos sobresalientes y más cursos repetidos) que los que no presentan sintomatología. Únicamente se hallaron diferencias en función del sexo en el número de cursos repetidos, mayor en las niñas que en los niños. En ninguna de las variables estudiadas se encontraron diferencias en la interacción entre la sintomatología depresiva y el sexo.

Discusión y conclusión. Es conveniente la detección temprana de sintomatología depresiva en el ámbito escolar con el fin de prevenir problemas de rendimiento académico.

Palabras Clave: sintomatología depresiva, rendimiento escolar, estudio descriptivo, población infantil.

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Introduction

The prevalence of childhood depression in Spain is between 5 and 10% (Del Barrio, 2007), but rises to 14% in clinical population (López, Alcántara, Fernández, Castro & López, 2010). Depression symptoms in children are varied and differ from those in adults. According to Del Barrio (2007), among the most characteristic symptoms of depression in children are behavior problems, irritability, tantrums and disobedience. In addition, and similar to adults, children have low self–esteem, sleep changes, lessened or increased appetite and weight gain, social problems, hyperactivity, dysphoria, and suicidal ideation. Depressive symptomatology in children is related to psychosocial difficulties with respect to family, school and peer relationships (Levendosky, Okun & Parker, 1995). Based on a review of studies on childhood depression, Del Barrio (1997) developed a list of symptoms that were divided as a function of the affected area (emotional, motor, cognitive, social, behavioral or psychosomatic), the cognitive area including the lack of concentration and low academic performance.

Since the earliest studies, childhood depression has been often associated with decreased school performance (Blechman, Mcenroe, Carella & Audette 1986; Doménech & Polaino–Lorente, 1990; Feshbach & Feshbach, 1987; Kaslow, Rehm & Siegel, 1984; Nissen, 1989; Shafii & Shafii, 1995). One of the first studies carried out by Bauersfeld (1972) concluded that 13% of children with school failure manifest depression. In subsequent studies, a higher incidence of depression has also been observed in children who have repeated a grade than those who have not (Domenech & Polaino–Lorente, 1990). In addition to the number of repeated courses, according to Cabrera and Jiménez (1990) a greater number of failures in different subjects is evident in children with mood problems.

In recent years the study of the relation between childhood depression and school performance has aroused great interest. In a study conducted by Fletcher (2008), adolescents with depression were less likely to graduate from high school and showed a decrease in school attendance. The European Regional Office of the World Health Organization (Suhrcke & Nieves, 2011), in a study on the impact of health and healthy behaviors on school performance, confirms the negative influence of anxiety and depression on academic outcomes. Difficulty in concentration, a common symptom in children with depression, seems to be related to difficulty getting good grades (Cole, 1991; Patterson & Stoolmiller, 1991; Roeser, van der

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Wolf & Strobel, 2001). In a recent study by Bernaras, Jaureguizar, Soroa, Ibabe and Cuevas (2013), an inverse and significant correlation between depressive symptoms and academic achievement was found. Problems in social relationships, self–concept and clinical, personal and scholastic areas were higher in the group of students who were diagnosed with depression than in those with no symptoms.

Objectives

Despite data showing the relation between depression and decreased school performance, few studies have been conducted with Spanish children. Therefore, the aim of this study is to examine whether there are differences in academic performance based on the presence of depressive symptoms, and taking into account gender and age of participants. Based on the previous literature (e.g., Fletcher, 2008), the hypothesis was established that children with depressive symptoms have poorer school performance (more courses evaluated as Failure, fewer courses evaluated as Excellent, and more repeated grades) than those who do not present depressive symptoms. According to data from previous studies with different educational levels (Sarmiento, Vargas & Díaz, 2012; Echavarri, Godoy & Olaz, 2007; Plazas, Aponte & López, 2006; Requena, 1998), girls are expected to have better academic achievement than boys.

Method

Participants

Participants were 658 children aged between 8 and 12 years (M = 10.85; SD = 0.97), 49.6% boys. 86.6% of the sample were Spanish and the rest were born in other countries, but all of them were Spanish–speaking children. Socioeconomic status, determined by the employment of parents and the location of the school they attended, was average. Regarding family status, 82% of the children had married parents, 16% had divorced or separated parents, and 2% had a single parent or were orphans. Most of the children had one sibling (61%), 16% had two siblings, 13.4% had no sibling, and the rest had three or more siblings.

To consider academic performance as a function of the presence of depressive symptoms, two subgroups were established based on a cutoff score of 19 on the Child Depression Inventory (CDI; Kovacs, 1992), indicating depression (Domènech & Polaino–Lorente, 1990;

Ezpeleta, Osa, Gratacos & Pons, 1992). Sociodemographic characteristics of the sample with and without depressive symptoms are presented in Table 1. The average age was 10.77 (*SD* = 1.031) for participants with depressive symptoms and 10.86 (*SD* = 0.96) for those with no symptoms. The percentage of males was 50.2% and 43.4% respectively in the two groups. No significant between–group differences were found for any of the sociodemographic variables.

Table 1. Characteristics of the sample

Variables	Children with depressive symptoms (*n* = 50)	Children withoutdepres–sive symptoms (*n* = 608)
Age	10.77 (1.031)	10.86 (0.96)
Number of siblings	1.47 (1.030)	1.29 (1.13)
Boys (%)	50.2	43.4
Native to Spain(%)	87.2	79.2
Father's educational level (%)		
University	5.6	3.8
High school	13.2	3.8
Elementary	74.9	82.7
Non–available	16.3	9.7
Mother's educational level (%)		
University	3.6	4.2
High school	10.9	12.5
Elementary	59.5	60.4
Non–available	26	23
Employed fathers (%)	93.7	90.4
Employed mothers (%)	97.9	95.8

Instruments

Participants completed a brief sociodemographic questionnaire providing information about age, sex, job of his/her mother and father, family status, number of siblings, and birth country. They also completed the Child Depression Inventory (Kovacs, 1992) that assesses depressive symptomatology in children and adolescents between the ages of 7 and 15. It con–sists of 27 items with three response options (0 = no symptoms, 1 = mild symptoms, 2 = de–pressive symptoms). It includes two subscales, dysphoria and negative self–esteem, and an

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overall depression scale. The total score of the questionnaire ranges from 0 to 54. The inventory can be applied individually, which is recommended for young children and clinical population, or collectively for non-clinical research purposes or as a screening measure. The Spanish version of the CDI (Del Barrio & Carrasco, 2004) has satisfactory psychometric properties, with an internal consistency of .79. Test-retest reliability at an interval of two weeks was low (alpha = .38), which is usual in clinical samples (Del Barrio & Carrasco, 2004)

The academic performance of the participants was examined in order to obtain information on: (a) the number of courses evaluated as Failure in the last evaluation (the number of courses in which the student received a score of less than 5, not meeting course objectives); (b) the number of courses evaluated as Excellent, that is, the number of courses with a score of 9 or more, indicating excellent performance on course objectives; and (c) the number of grades that the child had repeated.

Procedure

Participants were recruited from seven public and private schools of Alicante, selected randomly from urban and rural areas of the coast and the interior. Authorization was requested from the schools and parental informed consent was obtained. 95% of the parents gave consent for their children to participate in the study. Participants completed the questionnaires anonymously in the classroom. Questionnaires were distributed and the instructions were read aloud. Participants were asked to answer honestly and to raise their hands if they had any questions. No participant left more than 20% of the items unanswered, so that no questionnaire was excluded from the data analysis. The Ethics Committee of the authors' institution hadpreviously approved the study.

Statistical analysis

A Multivariate Analysis of Variance (MANOVA) was conducted including gender and "presence or absence of depressive symptoms" as independent variables; academic performance (number of Failure grades, number of Excellent grades and years of school repeated) were considered as dependent variables, and the analysis was adjusted for age. Cohen effect size was calculated for the significant comparisons, considering 0.20 as a small effect size, 0.50 medium, and 0.80 large. All statistical analyses were performed with the SPSS program.

Results

Considering the cutoff on the CDI, 7.6% (n = 50) of the total sample (N = 658) reported depressive symptoms. The MANOVA results showed significant differences in all the dependent variables as a function of the presence of depressive symptoms (F (1, 656) = 16.561; $p < .001$) and as a function of participant gender (F (1, 656) = 3.658; $p < .05$), but not in the interaction between the two factors (F (3, 655) = 1.527; $p > .05$). Depending on the presence or absence of depressive symptoms, significant differences were found in all measures of academic performance, with a greater number of repeated grades ($p < .01$), more Failures ($p < .001$) and fewer Excellents ($p < .001$) in children with depressive symptoms. The effect size was medium for the number of repeated grades (d = 0.41) and large for the number of Failure and Excellent evaluations (d = 0.71, d = –0.84, respectively). As for gender, differences were significant in grades repeated, higher in girls than in boys ($p < .05$), with a small effect size (d = –0.38). The means and standard deviations for academic performance in children with and without depressive symptoms and the results of the comparisons between the two groups are presented in Table 2.

Table 2. Differences in academic performance as a function of gender and the presence of depressive symptoms, and adjusted by age

		Children with depressive symptoms (n = 50)		Children without depressive symptoms (n = 608)		F		
		M	*SD*	*M*	*SD*	G	DS	G X DS
Number of repeated grades	Boys	0.10	0.30	0.05	0.23	4.44*	11.60**	4.21
	Girls	0.24	0.43	0.05	0.22			
	Total	0.18	0.39	0.05	0.22			
Number of Failures	Boys	2.10	2	0.87	1.44	3.55	39.65***	0.000
	Girls	1.72	2.05	0.49	1.04			
	Total	1.88	2.02	0.68	1.30			
Number of Excellents	Boys	0.29	0.90	2.03	242	1.14	20.62***	0.05
	Girls	0.76	1.12	2.33	2.63			
	Total	0.56	1.05	2.18	2.53			

* $p < .05$, ** $p < .01$, *** $p < .001$, G = gender, DS = depressive symptoms

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Discussion

The aim of this study was to examine whether academic performance in children differs according to the presence of depressive symptoms, taking into account gender and age. The number of Failures, the number of Excellents and the number of repeated grades were examined. The results confirm the existence of significant differences in school performance, with a higher number of repeated grades, more Failure and fewer Excellent evaluations in children with depressive symptoms. The interaction between depressive symptomatology and gender was not significant for any of the variables, and differences by gender were found only in the number of repeated grades.

Previous studies that have examined academic performance in children with depression are consistent with our findings. In one of the first studies conducted, Bauersfeld (1972) found that more than 10% of children who had school failure also showed depressive symptoms. In a Spanish population, Domenech and Polaino-Lorente (1990) found a higher incidence of depression among children who had repeated a grade. Similarly, in a study of school performance in language, mathematics and social studies courses, it was concluded that the failure rate was higher in children who had depressive symptoms (Cabrera & Jimenez, 1990). With adolescents, school performance has also been associated with depression. Perez and Urquijo (2001) examined the relationship between depression and academic performance in language and mathematics courses, showing that, as depressive symptoms increase, academic performance decreases. In search of a predictive model of childhood depression, Bernaras et al. (2013) studied its relation to academic performance, understood as student performance compared to other classmates, finding a significant inverse correlation between depressive symptomatology and academic performance.

International research also provides consistent results with those obtained in the present study. In Mexican adolescents, an inverse relationship was found between school achievement and depression, with decreased performance in Maths, English and Geography as depressive symptoms increase (Galicia, Sánchez & Robles, 2009). Likewise, Owens, Stevenson, Hadwin and Norgate (2012) investigated the relation between negative affect, worry, working memory and school performance, concluding that higher levels of anxiety and de-

pression are associated with lower academic achievement. In addition, depressive symptoms have been considered to negatively affect performance related to basic math skills, spelling, reading, and writing (Lundy, Silva, Kaemingk, Goodwin & Quan, 2010). Other studies have shown that children with depression have poorer performance related to problem solving (Emerson, Mollet & Harrison, 2005) and working memory (Matthews, Coghill & Rhodes, 2008).

Regarding gender differences in school performance, contrary to expectations, girls showed poorer academic performance than boys. Specifically, although the effect size is small, they repeated more grades. Most previous studies carried out with general population have shown better performance in girls than in boys (Sarmiento et al., 2012; Echavarri et al., 2007; Plazas et al., 2006; Requena, 1998). Although the reason for this divergence from previous studies is unclear, it is possible that depressive symptoms affect girls more than boys and therefore have more impact on their academic performance. In our study, the number of repeated grades is higher in girls with depressive symptoms than boys, but it does not differ when participants do not show depressive symptoms

The study has some limitations that should be taken into account when interpreting the results. First, it is a cross-sectional study, while longitudinal studies would be helpful for identifying changes in academic performance in children who manifest depressive symptomatology. In addition, it would be desirable in future research to control certain variables that may be involved in school performance, such as motivation, self-concept or family support. The educational implications of our study are clear. Early detection of depressive symptoms in schools is important in order to prevent academic performance problems. Similarly, we underscore the importance of examining the presence of depressive symptoms in children whose academic results are declining from earlier grades, in order to make improvements in academic performance from a context of intervention in their emotional problem.

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