



## Disruptive behavior disorders: Multidimensional analysis

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**ABSTRACT.** The study focuses on the analysis of the contribution of sociodemographic, clinical, academic and family variables to the likelihood of the presence of disruptive behaviour disorder (DBD). *Ex post facto*, retrospective, transversal, comparative study in two groups (cases of DBD and clinical controls) is used. Ages range 6 to 16 years. Sample of 1,847 clinical cases. Cases and controls are defined by clinical interview according to DSM-IV-TR criteria. A descriptive phase and an estimated logistic regression procedure are included. The proposed model is significant and correctly classified 87.2% of cases. The variables male sex (OR = 1.82,  $p = .00$ ), comorbidity (OR = 7.68,  $p = .00$ ), borderline intellectual functioning (OR = 3.15,  $p = .00$ ), less educated mothers (OR = 1.57,  $p = .04$ ) and repeat the course (OR = 2,  $p = .00$ ), significantly increased the probability for DBD. The variables age, psychiatric history, divorced parents and fathers' educational level are not significant in the model. DBD has multidimensional association with clinical, academic and family variables, being eligible for the inclusion in prevention programs.

**KEY WORDS.** Disruptive behaviour disorder. Conduct disorder. Oppositional defiant disorder. *Ex post facto* study.

**RESUMEN.** El estudio tiene como objetivo el análisis de la contribución de variables sociodemográficas, clínicas, familiares y académicas en la probabilidad de presentar

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trastorno de comportamiento perturbador (TC). Se utiliza un diseño *ex post facto*, retrospectivo, transversal, comparativo con dos grupos (casos de TC y controles clínicos). La muestra es incidental y consta de 1.847 casos clínicos, con edades comprendidas entre los 6 y 16 años. Casos y controles se han definido mediante entrevista clínica según criterios DSM-IV-TR. El procedimiento incluye una fase descriptiva y un método estimativo multivariable de regresión logística para dar respuesta al objetivo principal. El modelo de regresión logística propuesto es significativo y clasifica el 87,2% de los casos. Las variables sexo varón ( $OR = 1,82$ ;  $p = 0,00$ ), comorbilidad ( $OR = 7,68$ ;  $p = 0,00$ ), CI límite ( $OR = 3,15$ ;  $p = 0,00$ ), menor nivel educativo madres ( $OR = 1,57$ ;  $p = 0,04$ ) y repetir curso ( $OR = 2$ ;  $p = 0,00$ ) incrementan significativamente la probabilidad para TC. Las variables edad, antecedentes psiquiátricos, padres separados y educación de padres no resultan significativas en el modelo. El TC presenta asociación multidimensional con variables clínicas, académicas y familiares, susceptibles de inclusión en programas preventivos.

**PALABRAS CLAVE.** Trastornos de comportamiento perturbador. Trastorno disocial. Trastorno negativista desafiante. Estudio *ex post facto*.

The present study focuses on the analysis of the clinical population of children and adolescents with disruptive behavior disorders (DBD), comparing DBD patients with controls and analyzing the contribution of sociodemographic, clinical, academic and family variables about the likelihood of presence of DBD. According to the DSM-IV-TR (American Psychiatric Association [APA], 2002), DBD includes oppositional defiant disorder (ODD), conduct disorder (CD) and disruptive behavior disorder not otherwise specified (DBD NOS). CD is a persistent pattern of repetitive behavior which violates the basic rights of others or major social rules appropriate to the age of the subject. ODD is a persistent and recurrent pattern of negativistic behavior, disobedient and hostile conduct, directed to the authority figures. DBD NOS is a category of disorders characterized by defiant behavior that does not meet the criteria for ODD or CD according to the DSM-IV-TR. DBD is one of the most common causes of referral to clinical psychologists and child psychiatrists, being one of the most important clinical problems in terms of morbidity and dysfunction in children (Lopez-Villalobos, 2002; Rey and Domínguez, 2010) and causing serious problems in the individual's biopsychosocial development (Tremblay, 2010). The importance of the attention to these problems is highlighted by the knowledge that longitudinal studies find that most of DBD begins in early childhood (Tremblay, 2010) and becomes into serious behavioral problems in adulthood. There are more likely to commit crimes, abuse drugs, suffer from emotional disorders, suicide attempts, many sexual partners, violence against partners and have children before twenty years of age (Fergusson, 2008).

Regarding the features associated with DBD included in our investigation, it is known that CD is more common in males, who suffers more expulsions of class, more learning problems, lower educational attainment, comorbidity with other mental disorders, more rejection or leaved by parents, more divorced mothers and may be associated with below average intellectual level. When the symptoms have an early onset and behaviors

are affected in more than one environment the prognosis is worse. Several authors say the familiar pattern has both genetic and environmental components (American Psychiatric Association [APA], 2002; Koch and Gross, 2005; Luangrath and Hiscock, 2011; Tremblay, 2010). In the same perspective of analysis, ODD is associated more often to male gender, learning disabilities and shows comorbidity with ADHD. It is more common in families with parents who have problems in mental health and serious marital conflicts (American Psychiatric Association [APA], 2002; Luangrath and Hiscock, 2011; Luiselli, 2005; Rey and Domínguez, 2010).

DBD are interrelated and often described together in the research literature on risk factors. In our study these disorders are considered as a broad spectrum (Steiner and Remsing, 2007) included under the heading of disruptive behavior disorders (DBD). The decision of our work is based on the research of the authors and in the knowledge that approximately 90% of children with CD include clinical ODD (Newcorn and Halperin, 2003) and is usual an evolutionary progression from ODD to CD with increasing age (American Psychiatric Association [APA], 2002; Loeber, Burque, Lahey, Winters, and Zera, 2000; Steiner and Remsing, 2007). Moreover, it was found that environmental and social risk factors for CD and ODD are quite similar and 40% of the comorbidity between both disorders can be explained by common factors. Several authors mention a large number of researches suggesting a strong link between CD and ODD, which allows the argument of common factors in the etiology of both disorders (Boden, Fergusson, and Horwood, 2010).

The aim of our study is to know the amount of patients with DBD attended in a clinical context and the characteristics associated with them. The contribution of sociodemographic, clinical, family and academic factors to the presence of DBD was studied and cases with clinical controls were compared.

The basic hypothesis of our research is DBD patients would have more problems in clinical dimensions (higher comorbidity), family (more psychiatric history and separated parents) and academic (lower achievement) than controls.

As a justification of the study, it is thought that there are few studies with a similar clinical sample in our context and culture and it is assumed that identify the factors associated with psychopathology in children and adolescents is one of the relevant objectives of the epidemiological research. The usefulness of these data is highlighted when considering their possible applications in the field of mental health: generating explanatory hypotheses about the etiology of childhood disorders, making early detection of groups at risk and preparing prevention plans that avoid the development of more severe diseases or their maintenance until adulthood.

## Method

### *Participants*

The study include all the patients ( $N = 1,837$ ), six to sixteen years, treated at a mental health unit (MHU) during a period of eight years. The sample consists of 238 cases of DBD and 1,599 cases without DBD.

DBD patients are males in 70.6% ( $n = 168$ ) with a mean age of 9.85 years ( $SD = 3.79$ ) and female in 29.4% ( $n = 168$ ) with a mean age of 10.09 years ( $SD = 3.88$ ). Patients without DBD are males in 56% ( $n = 896$ ) with a mean age of 9.02 years ( $SD = 3.71$ ) and females in 44% ( $n = 703$ ) with a mean age of 10.29 years ( $SD = 3.97$ ).

### *Instruments*

- Child Symptom Inventory (CSI). The scale was developed by Gadow and Sprafkin (1997) and includes an analysis of the diagnostic frames according to DSM-IV-TR. In order to define DBD, paragraphs B (oppositional / defiant disorder) and C (conduct disorder) of CSI were used in the parents' version. Each section contains questions defining the appropriate category and parents answer to each item choosing the answer that best describes the frequency of such behavior. The categorical method as a model of correction was used, where symptoms are scored as present (*often* = 1, *very often* = 1) or absent (*never* = 0, *sometimes* = 0). When the number of symptoms is more or equal than required by DSM-IV-TR, diagnosis is assessed as present and otherwise is absent. The diagnostic process of DBD case ends by clinical interview, as recorded in the procedure. The proper clinical use of CSI is associated with its use by an expert who has an adequate management of DSM-IV-TR and the test authors specified that the inventory can be used by specialized clinicians as a guide for the clinical interview (Gadow, 2000). Oppositional defiant disorder (ODD) composes B category of CSI and consists of eight items; four of them must be present to receive a positive diagnosis (DSM-IV-TR). It is defined by a recurrent pattern of negativistic, defiant and hostile behavior that persists for at least five months and is characterized by the frequent occurrence of at least four of the following behaviors: fits of rage, arguing with adults, disobedience, leading out deliberate acts that annoy other people, blaming others for their mistakes or behavioral problems, susceptibility or feeling easily annoyed by others, appearing angry and resentful, or being spiteful and vindictive. Conduct disorder (CD) is the C category of CSI and shows 15 items; three of them must be present to receive a positive diagnosis (DSM-IV-TR). CD has a pattern of persistent and repetitive behavior, which violate the basic rights of others or major social rules appropriate to the age of the subject as an essential characteristic. These behaviors are divided into four groups: aggressive behavior that causes physical harm or threatens to people or animals, destruction of property, frauds or thefts and serious violations of standards. The test-retest reliability was significant for all CSI categories including ODD ( $r = .70$ ) and CD ( $r = .64$ ). Internal consistency, assessed using Cronbach's alpha coefficient, was .91 for ODD, and .79 for CD. The predictive validity of the method was examined by comparison with clinical diagnoses given by hospital doctors and structured psychiatric interviews. Sensitivity values were .69 for ODD and specificity values were .75 for ODD and .83 for CD.

- Wechsler Intelligence Test for Children (Wechsler, 1999). The WISC-R, as defined by the author, has been designed as a measure of general intelligence, understood as a multifaceted construct that includes the skills and abilities that determine the intelligent behavior. WISC-R consists of 12 tests, provides results of IQ and includes scales in the Spanish population between 6 and 16 years. The test set is averaged over the total scale, which is a measure of general intelligence and is reflected in a total intellectual coefficient (TIQ). Our study refers to the borderline intellectual variable (derived from the WISC-R), ranging between a TIQ of 71 to 84 according to DSM-IV-TR. The WISC-R manual shows that the coefficient of reliability of the total scale is placed between .89 and .94 (6 to 16 years of age). The coefficient of stability over time for the total scale is high ( $r = .95$ ). Concurrent validity of full scale has a correlation of .80 with the Stanford-Binet and .79 with the WISC-III (Zimmerman and Woo-Sam, 1997).

#### *Other indicators*

- Clinical diagnosis and comorbidity were assessed by CSI and clinical interview according to DSM-IV-TR.
- Psychiatric history is recorded until the second generation, without specifying the type of disorder. First-or second-degree relatives who had to go to psychiatrist or psychologist at some point in their lives were asked about.
- The variable «parental education» was grouped into two levels: basic education comprising elementary level and higher, including any study that exceeds that one.
- In our study the variable «children education» means to repeat the academic year (yes / no).
- The variable «core of coexistence» means to have divorced parents (yes / no).
- The variable «health care before attending MHU», means to go with the child to a psychologist or psychiatrist office before coming to MHU (yes / no).

#### *Design*

An ex post facto retrospective study of two groups, one of quasi control (Montero and León, 2007) was done. It is important to emphasize that our study has considered the criteria for the preparation and review of research manuscripts proposed by Ramos-Alvarez, Moreno-Fernandez, Valdes-Conroy, and Catena (2008).

#### *Procedure*

The research starts with the retrospective epidemiological description of the clinical population seen at a Mental Health Unit (MHU), contrasting cases (DBD) and controls (NOT-DBD).

The cases are referred to MHU by family physicians and pediatricians working in primary care offices and are received by mental health professionals. The tests previously referenced are applied in the first query evaluation by clinical psychologists.

Clinical cases of DBD meet the following inclusion criteria: there was a probable case of DBD when it was exceeded the categorical cut-off point (DSM-IV-TR) in B (ODD) and C (DBD) categories included in the CSI answered by parents. The inclusion process of DBD case ends by a clinical interview performed by clinical psychologists with several years of experience, to ensure the strict compliance with all DSM-IV-TR to DBD. This interview includes direct questions on intensity and duration of symptoms reflected in the CSI, the presence of clinically significant impairment in social or academic activity caused by the symptoms and the exclusion of the symptoms are better explained by other diagnostic category.

Inclusion criteria for controls (NOT-DBD) were the exclusion of DBD by the procedure above described.

### *Data analysis*

Measures of morbidity are showed, using descriptive statistics for the studied variables, with statistical significance tests and the degree of association among variables. To estimate the presence or absence of DBD in terms of theoretically relevant indicators related to our research, in the context of the whole variables in the model, an estimate model of multivariate logistic regression analysis was used. Parameters were estimated by maximum likelihood method. The significance of model parameters was performed using the Wald test, accepting a significance level  $\alpha \leq .05$ . The maximum likelihood estimates (coefficients) were estimated for each factor of the model, in which odds ratios were determined and confidence intervals at the 95% were calculated.

## **Results**

DBD are 13% of cases ( $n = 238$ ) treated in MHU. The most frequent diagnoses are attention deficit hyperactivity disorders (ADHD) ( $n = 247$ ), eating disorders ( $n = 82$ ), tic disorders ( $n = 40$ ), elimination disorders ( $n = 345$ ), anxiety disorders ( $n = 280$ ), borderline intellectual functioning ( $n = 99$ ), mood disorders ( $n = 50$ ), adjustment disorders ( $n = 116$ ), sleep disturbances ( $n = 70$ ), communication disorders ( $n = 75$ ) and learning disorders ( $n = 64$ ) and DSM-IV-TR category called «other problems that may be of clinical care» (psychological factors affecting physical condition, drug-induced disorders, relationship problems, problems related to abuse or negligence and additional problems that may be subject to clinical care) ( $n = 408$ ).

Table 1 includes a descriptive analysis of the variables analyzed in cases (DBD) and controls (NOT-DBD). The number of cases in each variable and the percentage represented in each category are reflected.

**TABLE 1.** Differential descriptive analysis DBD / not DBD.

<i>VARIABLES</i>	<i>DBD</i>	<i>not DBD</i>
Male	168 (70.6%)	896 (56%)
Female	70 (29.4%)	703 (44%)
Age (mean)	9.92 ( <i>SD</i> = 3.81)	9.58 ( <i>SD</i> = 3.88)
Psychiatric history	128 (55.9 %)	731 (47.8%)
Comorbidity	112 (47.1%)	178 (11.1%)
Borderline intellectual functioning.	15 (6.3%)	84 (5.3%)
Previous professional	35 (14.7%)	181 (11.3%)
Repeat academic course	67 (28.2%)	252 (15.6%)
Separated parents	26 (10.9%)	111 (6.9%)
Basic education (mothers)	191 (81.3%)	1,188 (74.5%)
Basic education (parents)	191 (81.3%)	1,173 (74%)

*Note.* DBD = Disruptive behavior disorders.

The observed ratios indicate that treated DBD cases are more usual in male [ $\chi^2_{(1, 1837)} = 18, p = .001$ ], in people having more psychiatric history [ $\chi^2_{(1, 1759)} = 5.25; p = .02$ ], higher comorbidity [ $\chi^2_{(1, 1837)} = 201.12; p = .001$ ], more repeated courses [ $\chi^2_{(1, 1837)} = 22.73; p = .02$ ], lower educational level of mothers [ $\chi^2_{(1, 1837)} = 5.09; p = .02$ ] and fathers [ $\chi^2_{(1, 1837)} = 5.82; p = .01$ ] and divorced parents [ $\chi^2_{(1, 1837)} = 4.76; p = .03$ ], in contrast to controls.

Comorbidity of DBD is mainly associated with ADHD (39%), «other problems that may be of clinical care» category (24%), elimination disorders (9.9%), borderline intellectual functioning (6.3%) and anxiety disorders (5.4%).

To estimate the presence or absence of DBD in terms of relevant variables related to our research, the model of logistic regression analysis was used. The results show that the variables male sex, having comorbidity, repetition of courses, borderline intellectual functioning and lower educational level of mother have a significant positive effect on increasing the likelihood of DBD (Table 2). The variables age, having divorced parents, have been previously treated by a psychologist or psychiatrist, fathers' educational level and having psychiatric history are not significant in the logistic regression model.

The proposed model is significant [ $\chi^2_{(10, 1837)} = 196.35; p = .001$ ] and classified correctly 87.2% of cases, using as a cut-off probability of .50.

**TABLE 2.** Multivariable logistic regression for DBD.

	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>df</i>	<i>Sig.</i>	<i>Exp(B)</i>	<i>C. I. 95% for EXP(B)</i>	
							<i>Lower</i>	<i>Upper</i>
Age	-0.001	0.023	0.000	1	.983	0.999	0.955	1.046
Sex	0.599	0.169	12.596	1	.000	1.821	1.308	2.535
Separated Parents	-0.297	0.271	1.200	1	.273	0.743	0.437	1.264
Basic Educ. (Mothers)	0.453	0.227	3.988	1	.046	1.573	1.008	2.454
Basic Educ. (Parents)	0.284	0.221	1.643	1	.200	1.328	0.861	2.050
Previous Professional	0.025	0.234	0.011	1	.915	1.025	0.648	1.621
Repeat Academic Course	0.695	0.210	10.943	1	.001	2.004	1.328	3.025



**TABLE 2.** Multivariable logistic regression for DBD. (Cont.)

	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>df</i>	<i>Sig.</i>	<i>Exp(B)</i>	C. I. 95% for EXP(B)	
							<i>Lower</i>	<i>Upper</i>
Comorbidity	2.039	0.169	145.328	1	.000	7.680	5.513	10.697
Borderline Intellectual	1.150	0.345	11.099	1	.001	3.157	1.605	6.210
Psychiatric History	0.060	0.158	0.147	1	.702	1.062	0.780	1.447
Constant	-4.423	0.585	57.176	1	.000	0.012		

*Note.* DBD = Disruptive behavior disorders.

The interpretation of the significant results in the context of the whole variables present in the model is as follows:

- Being male has an odds ratio for DBD 1.82 times higher than female.
- Having a clinical comorbidity has an odds ratio for DBD 7.68 times higher than having not.
- Having mothers with a basic education (not to exceed the elementary level) has an odds ratio for DBD 1.57 times higher than those who have mothers above that education level.
- Repeating course has an odds ratio for DBD 2.00 times higher than non-repeating.
- Having a borderline intellectual functioning has an odds ratio for DBD 3.15 times than having an average IQ or higher.

### Discussion and conclusions

According to our hypothesis, the estimated multivariable logistic regression model shows that the variables male sex, comorbidity, repetition of courses, borderline intellectual functioning and lower educational level of mother have a significant positive effect on increasing the likelihood of DBD, considering the presence of all the proposed variables. The variables age, psychiatric history, separated parents and father's education level are not significant in the model. This situation means DBD shows greater clinical, family and academic problems than the rest of the clinical cases treated at the MHU. Next paragraphs are a reflection about each one of the variables associated with DBD, as reflected in our research.

First of all, the classic socio-demographic dimensions are reviewed. The variable age (clinical context) does not increase the probability of DBD and the variable male does, as in the majority of the literature (Burke, Loeber, and Birmaher, 2002; Murray and Farrington, 2010).

Among the clinical dimensions, comorbidity is the variable most increasing the likelihood of DBD. The most frequent comorbidity in our research is the attention-deficit hyperactivity disorder (ADHD). Consistent with our study, the scientific literature shows that children with ADHD have comorbid DBD around 40-60% (Newcorn and Halperin, 2003), with references up to 80% (Rigau-Ratera, Garcia-Nonell, and Artigas-Pallarés, 2006). The high comorbidity between these disorders raises the question of whether they are different disorders or differential aspects of the same general phenomenon, and



even international classifications such as ICD - 10 provide a specific diagnostic category for hyperkinetic conduct disorder (World Health Organization [WHO], 1994). Anyway, this is a relevant topic because this diagnostic combination is a prognosis sign of worse evolution, favoring a more aggressive and persistent disturbed behavior, more rejection from peers, worse family relationship and with teachers, poorer academic performance and increased stress and instability family (López-Villalobos, Serrano, and Delgado, 2005; Newcorn and Halperin, 2003; Rigau-Ratera *et al.*, 2006; Steiner and Rensing, 2007). This set of circumstances necessitates a preventive attitude and an early detection to achieve a fitted treatment to both dimensions.

Among the clinical dimensions, it is noticed that the psychiatric history did not increase the probability for DBD in the context of all the variables in the logistic regression model, indicating that its contribution to the model was less important than other factors. The isolated analysis increases the chance for DBD.

An unsolved question is whether having parents with a mental disorder creates a general vulnerability to the psychopathology of children or specific disorders of parents are associated with similar disorders in their offspring (Bornovalova, Hicks, Iacono, and McGue, 2010). In this dimension, it is relevant the observation that our analysis has not considered the type of psychiatric history. The definition made in our variable is consistent with recent studies where appreciated that any type of mental disorder in parents was associated with an increased likelihood for any disorder in children and that parental psychopathology is a nonspecific risk factor for disorders in the offspring. Particularly the presence of parents with depression, generalized anxiety, panic disorder, substance use and antisocial personality were also significant predictors of behavior disorder in children. Even more, generalized anxiety or mood disorders in parents increase more the likelihood of behavioral disorders in their offspring than antisocial personality of parents (McLaughlin *et al.*, 2012).

There is evidence of clinical studies in which parental psychopathology did not increase the risk of behavioral disorders in children (Bragado, Bersabé, and Carrasco, 1999) and other studies in which this dimension is associated with behavioral disorders (Newcorn and Halperin, 2003).

Another clinical dimension analyzed in our study is that the presence of borderline intellectual functioning, in the context of the whole variables in the model, increases the probability of DBD. Low cognitive ability and its association with increased frequency of DBD is common in the literature (Boden *et al.*, 2010; Burke *et al.*, 2002; Lynham and Henry, 2001; Murray and Farrington, 2010; Rey and Domínguez, 2010).

The variables related to family background included in our study are psychiatric history (previously discussed), having separated/divorced parents and parents' educational level.

Having separated parents is more frequent among children with DBD of our analysis and several studies affirm that children of separated parents present more often DBD (Boden *et al.*, 2010; Burt, Barnes, McGue, and Iacono, 2008; Kalff *et al.*, 2001; Murray and Farrington, 2010).

However, the variable «separated parents» does not increase the likelihood of DBD in the logistic regression analysis implemented in our research, suggesting that its contribution is less important than other factors. A previous study, with a similar design

to ours, founded that the only variable that increased the likelihood of behavioral problems in ADHD cases was the relational factor (worse relationship with peers, parents and authority figures). In this study, the logistic regression model included several variables and one of them was the presence of separated parents. Similarly to our results, there was a higher proportion of separated parents in ADHD cases with behavioral disorders, but when it was included in a multivariate logistic regression model this variable failed to be significant, indicating that its contribution was less than other factors to predict DBD (Lopez-Villalobos *et al.*, 2005). In this context it is interesting to think about the fact that the variable separated parents can come together with other background dimensions that are associated in more extent to behavior disorders in children. Several dimensions that shaped the course of the separation of parents as the discipline method, relationships system, communication model, paternal role model or changes in social support networks can influence behavioral disorders of children. It is also worth considering the idea that parental separation can be a risk or a protective factor for behavior disorders, depending on the circumstances associated with the separation. Anyhow, our study does not address such situations and it is noticed that it does not increase the probability of DBD in the context of the proposed variables in the model.

The variable parents' educational level (equal or below the elementary level) is more common in cases of DBD. However, in the multivariate context of the factors proposed in our model, only the basic education level of mothers increases the likelihood for DBD. The variable basic educational level of fathers contributes in a lesser extent than other factors.

Poor education of the mother before pregnancy is cited as a more relevant risk factor to behavioral disorders (Tremblay, 2010) than poor education of fathers. Scientific literature includes studies where parents with less education level have more often children with behavioral disturbance than parents with higher education level (Kalff *et al.*, 2001; Velez, Johnson, and Cohen, 1989); other researches do not support this (Bragado *et al.*, 1999).

Regarding the circumstances of the greater influence of mothers in the DBD of the children, the literature presents studies in which physical and verbal aggression of sons is more closely related (has more influence) with the parenting factors associated to the mother (hostility / neglect, permissiveness and autonomy / love). In daughters, both parents have the same influence (Tur-Porcar, Mestre, Samper, and Malonda, 2012).

After considering the socio-demographic, clinical and family variables, the study focuses on academics ones. The paper includes the educational level of parents (previously mentioned) and the presence or absence of the repetition of school courses.

To repeat course increases the probability for DBD in our study. The low educational level (repeating courses) has been frequently associated to DBD (Bragado *et al.*, 1999; Murray and Farrington, 2010).

The results value DBD as a perturbation with multidimensional problems and make us to reflect on the need, in our environment and culture, of developing multi-professional programs coordinated with social, health and education services to care for this population. This need for additional interventions is supported by the recent research criteria

(Pulido, Martín-Seoane, and Lucas-Molina, 2011).

These programs for the reduction / prevention of behavioral disorders represent one of the greatest challenges in mental health, which would address on the changes of behavior involving social, school, family, individual and biological factors. It is desirable that these programs are based on previous researches that guarantee them and on the knowledge of risk and / or protection factors where to work on. Our survey is a modest contribution to the study of the variables associated with DBD, confirming that these dimensions may be a cause or an effect of the problem. The effects of the analyzed variables can be independent, interactive or in sequence and this situation neither can be released at the conclusion of this study, nor usually is precisely known. Probably a certain accumulation and interaction of biological and environmental factors are placed in the source of the problem.

Among the study's limitations the cross-cutting design and the specificity associated with the analyzed variables, the presentation way and the clinical context in which they occur are included.

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