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The Family Environment of Students with Learning Disabilities and ADHD

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1. Introduction

In recent decades there has been a proliferation of studies on the empirical aspect of the family influence on school development of children, and trends have emerged which analyze the effects of household structural and dynamic variables on student learning (Xia, 2010). Results show that family socioeconomic level (Dearing, McCartney & Taylor, 2009; Gil, 2011, Liu & Lu, 2008; Park, 2008), its typology characteristics (Burnett & Farkas, 2008; Gennetian, 2005), a suitable home environment (Barkauskiene, 2009; Bodovski & Youn, 2010; Campbell & Berne, 2007; Ghazarian & Buehler, 2010; Khan, Haynes, Armstrong, & Ronher, 2010) and parents' positive outlook on education and their active involvement in it (Flouri & Buchanan, 2004; Phillipson, 2010; Powell, Son, File, & San Juan, 2010; Regner, Loose, & Dumas, 2009; Sirvani, 2007; Mo & Singh, 2008) are factors affecting the academic development of the vast majority of children. This influence is even more relevant for pupils with complex problems that can affect their ability to learn, such as specific learning disabilities (hereafter LD) or attention deficit disorder with/without hyperactivity (ADHD). Such pupils usually have special educational needs which require specific attention in all microenvironments in which education takes place, including the family (Snowling, Muter, & Carroll, 2007; Shur-Fen , 2007).

LD is a concept that encompasses a heterogeneous group of disorders that manifest in significant difficulties in understanding, speaking, reading, writing, reasoning, and mathematical ability, presumably of biological origin and related to the functioning of the central nervous system (Kavale & Forness, 2000; Lerner & Kline, 2006). As for ADHD, it is a neuropsychological disorder that is characterized by a persistent pattern of inattention and/or hyperactivity-impulsivity that affects the social, academic and/or work life areas of the sufferer's life (Frazier, Youngstron , Glutimg, Watkins, & Marley, 2007; Jakobson & Kikas, 2007). Therefore, it is maintained that ADHD and LD are disorders of biological-genetic origin which are intrinsic to the individual. However, there has now been a shift in focus towards environmental variables, including the family, which are it is claimed can enhance or minimize the negative effects of these difficulties and, therefore, must be thoroughly examined and taken into consideration (Pheula, Rohde, & Schmitz, 2011; Snowling, et al. 2007; Shur-Fen, 2007).

The research available on learning and environmental conditions confirms the importance of adequate family functioning, as well as the existence of a satisfactory home environment to

the children's correct academic development (Barkauskiene, 2009; Campbell & Verna, 2007). Specifically, studies suggest that pupils whose families help them and functionally interact with them, use effective educational styles and where there are few arguments and low levels of stress, do better at school and learn more easily (Bodovski & Youn, 2010; Guoliang, Zhang , & Yan, 2005; Halawah, 2006; Heiman, Zinck, & Heath, 2008). However, in troubled or dysfunctional families subjects receive fewer stimulation and of lower quality, and their academic development is therefore slower (Ghazarian & Buehler, 2010; Sheppard, 2005). These factors can also be risk factors present in homes where there are children with LD or ADHD (Dyson, 2010; Foley, 2011). Usually in these pupils' homes there is a level of stress which impairs family functioning and the development of the person with the problem (Biederman et al. 1996; Hishinuma, 2000; O'Connor, McConkey, & Hartop, 2005; Strnadová, 2006, Trainor 2005). Additionally, parents' educational styles tend to be very directive and very ineffective (Johnston & Mash, 2001; Presentation, Pinto, Melia, & Miranda, 2009; Schroeder & Kelley, 2009). However, results are inconclusive. Some studies even fail to find a difference in the climate of families of children with LD and families of pupils without disabilities (Dyson, 2010; Heiman & Berger, 2008). Therefore, it is necessary to undertake further studies in this area.

Other factors that influence children's learning are attitudes, perceptions and parental expectations regarding their academic performance. Apparently, parents' positive attitude towards their children and family support increase pupils' confidence in their abilities and awakens the child's interest in satisfying and meeting parents' expectations (Campbell & Verna, 2007; Figuera, Daria, & Forner, 2003). However, in families where there are children with deficits parents' negative attitudes towards their children tend to predominate. In such families there is usually fewer expression of feelings and emotions, and adults tend to provide negative feedback to their children on their behavior and ability, criticize them or underestimate their abilities, and show pessimistic expectations about their academic future (Dyson, 2010; Goldstein, Harvey, & Friedman, 2007; Stoll, 2000). These behaviors may help the child forge a negative self-image, thereby damaging the development of her/his personality (Taylor, Chadwick, Heptinstall, & Danckaerts, 1996). Given the importance of these elements, further studies are needed to verify these facts in the cases of LD and ADHD.

Another important aspect for pupils' academic success is the cooperation between their families and schools (Powell, et al., 2010). In this regard, it has been shown that parental involvement in education stimulates pupils' motivation toward academic work, their commitment to school and their perception of competence, control and efficiency (González, Willems, & Doan, 2005; Urdan, Solek, Schoenfelder, & 2007; Mo & Singh, 2008). Thus, parental involvement promotes children's proper academic development in general and is therefore of special interest in the case of LD or ADHD. In these cases, coordinated academic support between family and school, and an adequate level of family collaboration on academic work are factors that promote optimal learning (Martinez & Alvarez, 2005). In this case, there is also a degree of correlation between parental satisfaction and educational involvement (Gershwin, Singer, & Draper, 2008; Seitsinger, Felner, Brand, & Burns, 2008; Spann, Kohler, & Soenksen, 2003). It is, however, necessary to continue to analyze these interactions in the case of LD and ADHD.

There are some important controversies in research findings regarding the parents' offer of stimulating learning environments at home. While some studies found no difference

between families of children with LD or ADHD and children with standard performance (Rogers, Weiner, Marton, & Tannock, 2009; Sanchez García, Jara, & Cuartero, 2011), the majority indicate that most households of pupils with problems focus on enhancing the personal growth of family members and provide more stimulation and support for academic tasks (Huston & Rosenkrantz, 2005). In the latter cases, however, some studies indicate that helping children excessively on a daily basis can relate to high levels of parental protection (Tarleton & Ward, 2005), which, coupled with inadequate management of conflict of school issues contributes to parents developing parental anxiety and dissatisfaction. This in turn affects parents' ability to interact sensitively regarding the demands of the child and can lead to developing an intrusive and ineffective educational collaboration (Hedor, Anneren, & Wikblad, 2002). Whatever the case, it is necessary to further study this aspect, as the specific findings for LD and ADHD are not yet final.

Finally, structural elements such as low family income, parents' low level of education or a high number of siblings are risk factors for school failure (James, 2004; Marks, 2006). Some studies have shown that pupils with LD or ADHD disproportionately come from poor family backgrounds who do not support their education (Rydell, 2010), although more research is needed to enable a full understanding of these environmental influences on learning for children with LD or ADHD (Jordan & Levine, 2009; Xia, 2010).

In summary, to this day the real impact of each family contextual factor on the academic performance of children with LD or ADHD remains unknown. In addition, the existing studies present some limitations related to the samples, due to only with involving a parent or child, or the use of subjective assessment instruments (Antshel & Joseph, 2006; Murray & Greenberg, 2006; Smith & Adams, 2006, Trainor 2005). Therefore, there is a need for new studies that overcome these limitations and shed light on such a seldom studied field as the relationship of family and academic development of pupils to LD or ADHD. This is precisely the purpose of the present study.

The first objective of this study is to analyze the differences in family dynamics and structural variables in relation to the pupil's typological characteristics. To do this we compare families in which there are children with LD or ADHD and families of pupils with standard academic performance (normal achievement, NA).

The second objective is to compare the parents' views versus the children's views in each of the experimental groups (families of pupils with LD with ADHD or NA) to identify whether the perceptions of environmental variables differ from parent to child and if they do so more in some groups than others.

2. Methodology

2.1 Participants

Participants were 87 families of pupils enrolled in four Spanish private and state schools. This sample was drawn from a larger sample of 610 families studied. The selection process consisted of us looking at the smallest group (ADHD, n = 29) and then selecting and additional 29 cases of families of pupils with LD and 29 families of children with NA, taking several criteria into account, regarding the characteristics of the children and their families .

The first intersample balance criterion was pupils' intellectual capacity. We considered necessary for all children in our sample to have an IQ within the normal range. In this case it was confirmed that all pupils had an IQ of 80 or over.

The second pairing criterion was the school year, since this study that addresses issues related to learning, such as performance, and this factor is closely related to the year of study or grade. This item has a total balance in the distribution of participants to experimental groups as reflected by the absence of statistically significant differences between groups ($\chi^2 = .000$, $p = 1$). In addition, consideration of the educational level has enabled the matching of groups according to children's age ($\chi^2 = 19.989$, $p = .530$).

We then looked at the family elements in order to ensure the maximum similarity between the groups and verified that no statistically significant differences existed between groups in any of the factors analyzed, as evidenced by Chi-square statistic: father's age ($\chi2 = 45.981$, $p = 0.238$), mother's age ($\chi2 = 47.845$, $p = 0.131$) father's employment status ($\chi2 = 5965$, $p = 0.427$), mother's employment status ($\chi2 = 2413$, $p = .660$), parents' marital status ($\chi2 = 3105$, $p = 0.540$), number of people living in the home ($\chi2 = 11,586$, $p = 0.314$) and square meters of housing ($\chi2 = 71.188$, $p = 0.251$).

Regarding the criteria for inclusion of pupils in each sample group according to their types, several elements were taken into account.

To identify pupils with LD we used internationally established criteria (American Psychiatric Association, APA, 2002; National Joint Committee of Learning Disabilities - NJCLD 1997).

We first established the need for a diagnosis of a specific delay of at least two years and two standard deviations below the average yield from the normative age group and level of education. To this end, we conducted systematic interviews with teachers, which allowed us to identify pupils who had poor performance in writing, since, as already noted, this study's area of interest lies essentially in writing learning disabilities. We also carried out a direct assessment of pupil's writing competence. All the children, led by a researcher and in their own class groups, conducted an essay writing task with a free theme and length. The essays were subsequently corrected in a comprehensive manner by experienced and highly qualified professionals specifically trained for this purpose, using the text correction protocol developed by the research team headed by J. N. García. The results of each pupil were matched to the scale of regulated scores produced by the researchers, thereby assigning each child a position in that scale. This allowed us to identify those pupils whose writing performance was two standard deviations below the mean expected based on age and/or academic year.

Secondly, we required normal IQ in pupils, so we asked all children to perform Catell and Catell's (2001) G Factor test, which provides an overall intelligence score and the possibility of a collective application.

International standards for the diagnosis of learning disabilities also explicitly require the absence of any other developmental disorders which could explain the limitations associated with the field analyzed and to receive standardized and adequate schooling. Therefore, in our interviews with teachers we also verified these aspects, confirming that

pupils with LD did not have any other documented developmental disorder and received proper schooling.

The assessment procedure for the identification of writing disabilities was applied to all the pupils sampled, which also allowed us to identify children who make up the NA group. Faculty interviews were also used to rule out types of learning disabilities (reading or math) in these children, thus confirming that their overall performance in different areas was normal. Moreover, the fact that these pupils were classmates of children with LD meant both groups had received the same instruction in written composition.

The ADHD group was made up entirely of pupils with neurological and psychological clinical diagnoses, performed by multidisciplinary teams within the area of pediatric neurology at La Fe hospital (Valencia), Hospital de León (León) and the Universities of León and Valencia. However, in order to confirm the diagnosis we verified that all the children met the following criteria: 1) clinical diagnosis of combined ADHD subtype according to the Diagnostic and Statistical Manual of Mental Disorders, fourth edition, revised (American Psychiatric Association, 2003) and agreement between parents and teachers about the presence of at least six symptoms of inattention and at least six symptoms of hyperactivity/impulsivity; 2) the duration of symptoms exceeded a year, 3) the problem had appeared before age 7; 4) not suffering psychosis, neurological damage, epilepsy or sensory deficit. In addition, subjects T scored over sixty-three in scales of hyperactivity, inattention and total index of the Conners test, in its parental (CPTRS-R: S) and teacher versions (CTRS-R: S) (Conners, 2001).

The family participants were the mothers in 57.7% of cases, only 6.9% were the fathers, although 33% of the cases involved both parents (in 2.4% of cases the family participant did not indicated her/his relation to the pupil). The average age of the father figures was 44.5 years while that of the mother figures was 42.33 years. Regarding their education, in the case of families of children with NA, 10% of the parents had only reached primary studies, 56% secondary studies and 33% of parents had university studies. For families of pupils with LD, 32% of the families had primary studies, 64% secondary and 4% university studies. Finally, the parents of children with ADHD had reached 40% primary, 34% secondary and 26% university studies.

2.2 Instruments

In order to assess how parents and children perceive the different dimensions of the family educational context, we used the parental (FAOP-PA Robledo & Garcia, 2007) and the children's version of the Family Opinions Instrument (FAOP-HI, Robledo & Garcia, in press). This instrument has suitable psychometric properties in termsn of validity and reliability, with Cronbach's Alpha .921 for children and .929 for parents and includes different levels, as detailed in Table 1.

The set of questions also allows us to know the aspirations and expectations of parents and/or children regarding the educational and vocational future of children.

Similarly, the Personal Information section, allows us to look into the structural dimension of the home.

Scale	*Construct assessed*	*Dimensions*
Family opinions: satisfaction with education (FAOP-SE)	Satisfaction with education received, the school and its professionals (parents only)	- Communication and training: teacher-family communication and effective teacher training. - Attention to pupils and confidence: teachers' level of attention to children's needs and trust in and overall satisfaction with the teaching professionals. - Difficulties: interest of teachers in children's learning and having the training to deal with these difficulties. - Attitudes of teachers: respect, availability, friendliness and approachability of the faculty. - Collaboration and individual attention: degree of individual attention given to pupils and teachers' collaborative attitudes.
Family opinions: parental involvement in education (FAOP- IM)	Parental involvement in education (parents' and children's perception).	- Family involvement dimension: Family's motivation and support towards schooling. Collaboration and stimulation at home: stimulating behaviors and the promotion of learning environments within the home or at the family's initiative. - School involvement dimension: School-based collaboration, activities and behaviors that parents do in school with children, professionals, other families. Communication with school: contact between parents and teachers.
Family opinions: writing practice (FAOP-PRAES)	Parental role in teaching and motivation of written communication skills (parents' and children's perception).	- Practice reinforcing motivation: motivation to write by parents. - Practice effectiveness: parental ability to help in writing. - Practice psychological processes: parental involvement in teaching writing by helping with homework and with mechanical and higher-order aspects. - Practice writing stimulation: stimulation to write using everyday tasks, and specific models and materials.
Family opinions: home (FAOP-HOME)	Provision of a household with characteristics conducive to learning: resources, enhancing autonomy and maturity,	- Encouraging Learning Materials: home offer of stimulating materials and spaces for academic development. - Acceptance-love: acceptance, positive interactions and positive management of the child's feelings and behaviors. - Rejection-hostility: Rejection, hostility, anger, bitterness, resentment or lack parental interest in their children.

Scale	*Construct assessed*	*Dimensions*
	parenting styles, emotional control (parents' and children's perception).	- Educational styles: permissive, authoritarian or democratic, used by parents to exert control over their children. - Encouraging children's self-reliance, maturity and responsibility.
Family opinions: atmosphere (FAOP-FES)	Social and environmental characteristics of families (parents' and children's perception).	- Relationship Dimension: Cohesion, Expressiveness and Conflict - Personal Growth Dimension: Independence, Performance orientation, Cultural-intellectual orientation and Leisure-oriented activities. - System Maintenance dimension, stability: Organization and Control

Table 1. Description of the scales within FAOP

2.3 Design

We used two factorial designs, a 3×1 (type) and a 2×1 (role). The former to compare the three groups of families (LD, ADHD or NA) on the different dependent variables (FAOP). In the latter, for each of the groups considered, we compared parents' perception with those of their children.

2.4 Procedure

We requested the cooperation and consent of the management teams of each school and the teachers were informed of the object of the research and the nature of the help required from them. We asked them to answer questions about the children in order to classify them according to our typology and discard several problematic situations. Similarly, they had to enable researchers to carry out the evaluation sessions with pupils in which they underwent, once families' informed consent was obtained, all the relevant assessments. These assessments were carried out in groups over two sessions of one hour each. They also had to hand the FAOP questionnaire to families, along with a letter explaining the study and requesting their participation and that of their children, and be responsible for its subsequent collection. To ensure parents really filled in the scales and that they consented to their children's the evaluation they were explicitly asked to sign the questionnaire or return it in person.

Once the field work was completed, we corrected the assessments and computerized the results. We then proceeded to select the subsample which we used to perform the statistical analysis. In order to do this we used the Statistical Package for the Social Sciences (SPSS) version 17.0. Its results are presented below.

3. Results

In order to address our first objective (typology) we considered the type of pupil (LD, NA and ADHD) as a fixed factor, addressing the family's opinion as a whole, based on the

individual point of view of parents and children, although we only present the results relating to the general family view as we consider it to be the most representative.

To address the second objective (role), after selecting each target group (families with LD, NA and ADHD), we introduced being a parent or a child as an independent variable.

In both cases we included the dynamic family dimensions obtained through the FAOP as dependent variables, but in the first case we also considered structural factors (parental education and family size). In this first case, the univariate analysis of variance (ANOVA) performed to determine if relationships between the typological characteristics of pupils (NA, LD and ADHD) and household structural variables (educational level and family size) exist show the existence of statistically significant or close to significant differences regarding both the mother's (F=3.240, p=.045) and the father's level of instruction (F=2.608, p=0.081), as well as for the number of children (F=5.401, p=.006). Post-hoc contrasts confirmed results close to statistical significance in the educational level of fathers (p=0.093) and mothers (p=.086) of pupils NA (Mfather=3.32; Mmother=3.64) compared to children with LD (Mfather=2.4; Mmother=2.79). As for family size, data indicate that families of children with ADHD are larger than the other two groups (M_{ADHD}=2.22 vs. M_{NA}=1.69, p = .011 & M_{LD} = 1.76, p=.033).

3.1 Typology of children

Multivariate contrasts indicate high and statistically significant results, with a very large effect size [F (48, 74) = 2.655, p <.001, η2 = .633]. Meanwhile, tests of inter-subject effects show statistically significant results with effect sizes ranging from medium to large for 41.93% of the variables (see Table 2 for details).

VARIABLES	*NA*		*LD*		*ADHD*				
	M	*ST*	*M*	*ST*	*M*	*ST*	*F*	*p*	η^2
Communication with the school	31,36	5,93	30,2	5,73	34,5	4,9	3,451	,038	,103
Involvement in school	63,5	8,58	60,6	10,82	69,5	10,56	4,283	,018	,125
Efficacy in writing instruction	37,1	4,32	33,1	5,12	34,62	5,66	3,446	,038	,103
Stimulation towards writing	25,64	3,52	23,55	3,63	22,3	3,07	5,017	,010	,143
Rejection	31,8	6,24	34,2	7,65	38,6	7,56	4,894	,011	,140
Expressiveness	11,9	2,28	10,1	2,72	10,05	2,59	3,666	,031	,109
Conflict	13	2,81	14,1	2,22	11,3	2,63	5,790	,005	,162
Relationships	40,9	6,57	38,8	6,40	35,8	5,86	3,622	,033	,108
Cultural-intellectual orientation	13,2	2,56	12,25	3,02	10,71	3,69	3,646	,032	,108
Recreation	15	2,16	11,7	3,71	12,2	2,68	7,972	,001	,210
Total growth	49,32	5,36	45	9,02	43,6	6,91	3,677	,031	,109

Table 2. Intersubject test results for group.

When collating the post hoc contrasts we detected statistically significant differences in the perceptions of families whose children have problems vis-à-vis families of NA pupils in: expressiveness (LD vs. NA, p = .089; TDAH vs. NA, p = .063) and recreation activities (LD vs. NA, p = .002; TDAH vs. NA, p = .011), where the NA group received higher scores. The families of ADHD children also differed from those of NA children: Stimulation towards writing (p = .011), rejection (p = .012), relations (p = .034) and cultural-intellectual orientation (p = .033); all cases, except for rejection, showed higher scores for the NA group. But the families of ADHD children also differ from those of children with LD in communication with the school (p = .049) and involvement in school (p = .022), with higher scores for the ADHD group. We observed the same in the case of positive conflict resolution (p = .005), where LD families score higher. Finally, families of children with LD also differ from those of the NA group in parental efficacy in writing instruction (p = .042), with higher scores than the NA group. See Figure 1.

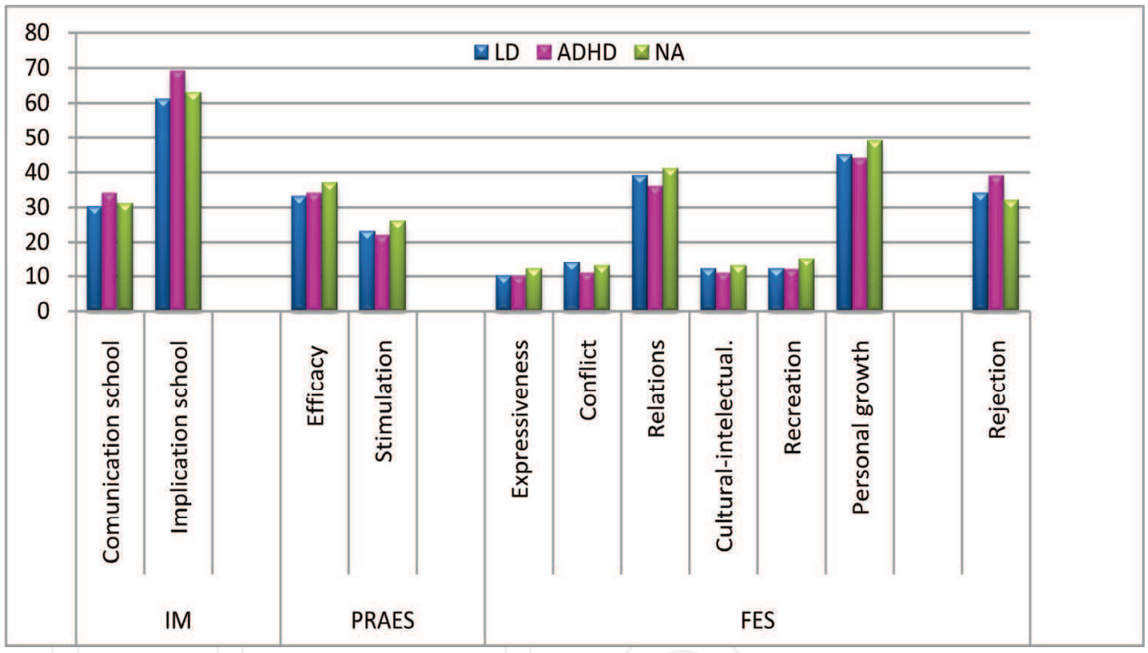


Fig. 1. Perceptions of families by family dynamic variables, according to the type of students.

We performed a final analysis, a univariate variance (ANOVA), to determine whether there were any differences in educational expectations of the family as whole, parents in particular and the pupils themselves, depending on the type of children. In all cases we found statistically significant results (family expectations, F = 7.277, p = .001, parental expectations, F = 11.451, p = .001 and pupil expectations, F = 3.103, p = .050). These were confirmed after post-hoc contrasts that showed differences in family educational expectations between the NA, LD (M_{NA} = 6.8 vs. M_{LD} = 5, p = .007) and ADHD groups (M_{ADHD} = 5, p = .009). We confirmed these results by looking exclusively at parents' opinion (M_{NA} = 3.7 vs. M_{ADHD} = 2.5, p = .002, and vs. M_{LD} = 2.3, p <.001). In terms of the children's own expectations there are also differences close to statistical significance between NA children and children with ADHD (M_{NA} = 3.2 vs. M_{ADHD} = 2.5, p = 0.068).

3.2 Parent vs. child role

Multivariate contrasts indicate high and statistically significant results, with a very large effect size for both the group of *families of children with NA* [F (24, 26) = 3.777, p = .001, η2 = .777], and for *families of children with ADHD* [F (24, 23) = 2.847, p = .007, η2 = .748]. For *families of pupils with LD* we found no statistically significant differences by including all FAOP scales together as dependent variables [F (24, 21) = 1.710, p = .109, η2 = .661]. Nevertheless, they were found when we did an individual analysis of each of the FAOP subscales, except for the FAOP-HOME scale.

Tests of inter-subject effects show which variables and between which groups there are statistically significant differences. Taking the variables obtained through FAOP-IM as a starting point, we observed that in both the NA group of families and the families of ADHD children parents' perceptions of home involvement (NA: Mparent = 60.2 vs. Mchild= 53.7, p <.001; ADHD Mparent = 56.6 vs. Mchild = 51.3, p = .008) and academic co-stimulation at home are higher than that of their children (NA: Mparent = 28.4 vs. Mchild = 25.1, p = .001; ADHD Mparent = 26.2 vs. Mchild = 22.1, p = .003). Likewise, parents of NA pupils report more motivation and academic support at home (Mparent = 31.8 vs. Mchild = 25.5, p <.001) and greater educational involvement in general than that recognized by their own children (Mparent = 91.2 vs. Mchild = 84.5, p = .011). For families of pupils with LD, the main differences between the views of parents and children, close to the statistical significance, are in terms of school-family communication (Mparent = 3.78 vs. Mchild = 4.21, p = 0.065) and overall involvement in it (Mparent = 29.1 vs. Mchild = 32.4, p = 0.084), with children's perceptions scoring higher.

In the FAOP-PRAES subscale, differences occur between parents and ADHD children in relation to the level of motivation towards writing offered at home, with parents scoring this type of activity higher (Mparent = 12.4 vs. Mchild = 10.3, p = .003). Meanwhile, families of pupils with LD showed the greatest statistically significant differences between parents and children. In this case, the children themselves identified a higher stimulation towards the use of higher psychological processes involved in writing composition than their parents (Mparent = 11.1 vs. Mchild = 12.6, p = 0.060), as well as feelings of effectiveness in writing instruction (Mparent = 35.1 vs. Mchild = 39.8, p = 0.019) and in the overall development of written composition (= 70 vs. Mparent. Mchild = 76.8, p = 0.049).

Regarding the FAOP-HOME scale, there are differences in the case of families of children with NA in the perception of the use of an authoritarian management style, with children scoring this higher (Mparent = 10.4 vs. Mchild = 12, p = .001). Meanwhile, in the case of families of children with ADHD, parents report feeling more acceptance (Mparent = 34.5 vs. Mchild = 32, p = .037) and rejection of their children (Mparent = 20.4 vs. Mchild = 17.5, p = .035) than reported by their children, similar to what happens in NA families, but only regarding acceptance (Mparent = 35.2 vs. Mchild = 32.8, p = .017).

Finally, in the FAOP-FES subscale, there are significant differences between parents and children in the three groups in expressiveness, with parents scoring higher (NA, p = .006; LD, p <.001, and ADHD, p = .013). For NA (Mparent = 21.4 vs. Mchild = 19.7, p = 0.097) and LD families (Mparent = 21.3 vs. Mchild = 18.4, p = .010) parents also report better family relations. ADHD families report a higher degree of stimulation towards intellectual-cultural activities (Mparent = 5.92 vs. Mchild = 4.79, p = 0.068). LD children perceive more parental

control than is recognized by parents (Mparent = 4.5 vs. Mchild = 5.6, p = .013), whereas in NA families children perceive greater independence than recognized by parents (Mparent=4.41 vs. Mchild = 5, p = 0.074).

In terms of expectations, statistically significant differences exist only between the views of parents and the children in the NA group, with higher parental expectations (M_{parent} = 3.73 vs. M_{child} = 3.21, p = .022).

4. Discussion and conclusions

Interest in LD and ADHD has been gradually shifting towards more holistic perspectives in terms of analysis and treatment, where not only the person is considered, but also all the social agents surrounding her/him (Dyson, 2010; Gortmaker, Daly, McCurdy, Persampieri, & Hergenrader, 2007; Mautone, Lefler, & Power, 2011; Polloway, Bursuck, & Epstein, 2001). However, despite progress in this area, there have been few and inconclusive results up to now (Dyson, 2010; Hegarty, 2008; Heiman & Berger, 2008; Xía, 2010). Therefore, it is necessary to conduct further research to jointly analyze the family dynamic and stable variables in relation to the academic performance of children with ADHD or LD. This will allow us to offer alternative multicomponent forms of intervention to promote these pupils' development.

The main objective of this research was to analyze the possible differences in the structural and dynamic family variables in relation to the characterization of pupils by comparing three groups of families organized by their children's typology and to study parents' and children's perceptions within each group.

When we look at the results for the structural variables in more detail, we see that the level of education of parents of children with LD is lower than that of parents of NA children. Families with lower levels of education provide less stimulating and literate home environments, so that children are at risk of starting school with lower levels of development of basic skills, which is particularly important in the case of LD (Dearing et al. 2009; Jordan & Levine, 2009; Park 2008; Van Stennsel, 2006; Williams & Dawson, 2011).

Furthermore, it should be stressed that LD has a strong genetic component, so that the limited education level of parents which was identified in this subgroup of children can be related to their own learning difficulties and thus biologically explain the deficits inherited by children (Berninger, Abbott & Thompson, 2001; Lyytinen, Eklund, & Lyytinen, 2005; Monuteaux, Faraone, Herzig, Navsari, & Biederman, 2005; Shalev, et al. 2001; Snowling, et al., 2007). Notwithstanding these circumstances, parental learning disabilities were not verified in the sample studied, and may be a future focus of analysis.

Also in relation to structural variables, the results of this study indicate that families of children with ADHD are bigger than those of the other two groups analyzed. Pupils with ADHD need a lot of academic support, and demand more attention from their parents than usual. Parents who have several children need to split their attention between them, so they can become overworked and stressed. This can affect their ability to interact sensitively with the child's the demands, leading them to develop an intrusive educational style (Ryan, 2002).

Secondly, when we look at the *dynamic dimension* and organize our data around the elements evaluated through the FAOP scale, we can draw several interesting conclusions.

Looking at the variables addressed through *FAOP-IM* we can conclude that parental educational involvement is greater in families of children with ADHD (Smith & Adams, 2006), even when compared with families of children with LD. One possible explanation for this is that the Spanish legislation at the time of the research had not yet enacted measures to address the specific needs of pupils with LD. Therefore, the pupils studied received no specific attention for their LD. This, together with the fact that LD is less apparent in external behavior than ADHD and the problems become apparent in writing when the pupil already has a fairly advanced schooling, may hinder parental diagnosis and explain the lack of continuous contact with the teachers (Bull, 2003; Dyson, 2010; Karende, Mehta, & Kulkarni, 2007; Rolfsen & Martinez, 2008; Stoll, 2000). It is also important to recognize a specific limitation of this research - a certain bias in the selection of the sample. Participants were obtained through intentional sampling, based on the voluntary cooperation of families. Also, in the case of families of children with ADHD, we found them mainly through associations or groups of families, so parents were aware of the problem the child faced.

In terms of home involvement, the parents of NA children reported more academic collaboration than those of pupils with LD, which is in line with studies that indicate that school success of children is positively related to the level of parental involvement and support in the home (Alomar, 2006; Knollmann & Wild, 2007; Phillipson, 2010; Pomerantz, Wang, & Fei-Ying, 2005; Regner, et al. 2009; Urdan et al., 2007). However, if we compare the perceptions of parents and children in each group, we see that parents of NA and ADHD children report higher academic involvement at home than that perceived by their children. These data are derived from the opinions of a group of parents that were aware that their responses were difficult to verify and, therefore, were more likely to exaggerate in order to achieve socially desirable responses.

Looking at the results derived from *FAOP-PRAES*, we can conclude that the families of pupils with LD differ negatively from families of NA children regarding parental perception of efficacy in writing instruction and in overall cooperation in teaching writing skills. The lower parental sense of efficacy in teaching writing in LD families may be explained by the fact that because children in this group have disabilities in this area, the help they require from their parents is very specific and they may not feel able to provide it (Bloomfield, Kendall, & Fortuna, 2010; Kay, & Fitzgerald, 1994). As for the degree of involvement in the general teaching of writing in the LD group, previous research has shown that a reason parents fail to cooperate on educational issues is their own lack of training in this respect, which will be even more salient in the case of helping children that require a very high level of expertise (Karende, et al., 2007). Thus, a practical implication derived from this result is the need to develop training programs for parents to enable them to contribute to the education of children with LD.

Finally, families of NA children, unlike those of pupils with ADHD, seem to encourage writing on a daily basis, offering models and materials at home for its development. This may be because children with ADHD often have a wide range of needs that may mean that communicative competence is not especially valued and that even if its is addressed it is done in less depth or in combination with other elements.

Regarding the results obtained from *FAOP-HOME*, we saw that parents of children with ADHD reported feeling more rejection of their children than parents of the other two groups (Presentation, et al. 2009; Shur-fen, 2007, Taylor et al., 1996). However, when comparing the perceptions of rejection/acceptance between parents and children of the ADHD group, adults scored higher on both. In relation to acceptance, the data is indeed negative, as the emotional and behavioral development of children with ADHD is mediated by external variables such as perceived acceptance or rejection of their family (Lifford, Harold, & Thapar, 2008; Murris, Meesters, & Van der Berg, 2003; Shaw, et al., 1998). While we need to be aware that this conclusion is mediated by the fact that perceptions of children with ADHD, obtained through self-reports, may be distorted by their disorder (Bauermeister, et al. 2005; Walcott & Landau, 2004), this is something that should be monitored in the future.

Other conclusions drawn from the data obtained through FAOP-HOME relate to parental educational styles. In this case, the parents of NA children exerted more democratic parenting styles than parents of pupils with ADHD, who seemed to be largely permissive. This may be due to the lack of positive reinforcement that they perceive during child rearing or to the highly prevalent strain the disorder puts on family relationships, as previous research has shown (Goldstein, et al. 2007; Keown & Woodward, 2002).

Analysis of *FAOP-FES* variables has led us to several conclusions. We have confirmed that the families of pupils with ADHD have less adaptive relational patterns than those of children with NA, followed by the LD group. Specifically, in families where the children have no problems there is a greater tendency to act openly, freely expressing one's feelings. One explanation for this result would be that the problems these children suffer affect their socioemotional development, which may account for the lower level of expression in intra-family relationships (Mason & Mason, 2005). It was also found that the level of family cohesion in the case of ADHD was lower than that experienced by the families of NA pupils (Bao-Yu & Lin, 2004; Wells, et al., 2000). The more intense feelings of attachment in families of NA pupils possibly facilitate the positive expression of feelings, and the lack of serious problems means there are no blockages to this dynamic. Finally, results indicate higher levels of conflict in families with ADHD compared with to the families of children with LD, possibly due to higher level of external expression of this disorder.

As for the overall growth dimension, one can conclude that the families of NA children show more favorable patterns regarding their overall development, by offering a variety of cultural and intellectual or leisure activities. This can be explained by the fact that in families where children have no problems parents are able to encourage such activities more often. However, in the case of children with LD or ADHD it is possible that leisure time is used to focus on academic tasks or on trying to alleviate the problems arising from the disorder itself, as demonstrated in studies that confirm that in these households performance-oriented activities are prioritized (Stoll, 2000), therefore the time and interest in leisure or other cultural activities is lower.

Finally, regarding the maintenance stability dimension, results show that such patterns of action are more common in the NA group than in the other two groups, especially that of exercising control, which is much greater in the NA group than in the LD group. Order and family rules promote children's development and learning, which could explain the

better performance of children without problems and be a risk factor in the case of pupils with LD.

When we examined *expectations* regarding the academic future of children, we found that pupils whose parents are more optimistic about them, NA group parents, show better academic performance (Fang, & Sen, 2006; Neuenschwander, Life, Garrett, & Eccles, 2007; Rubie-Davies, Peterson, Irving, Widdowson, & Dixon, 2010). In addition, the high expectations of parents of NA children were projected on the pupils themselves, who were also the most optimistic about their academic future. It is possible that pupils with problems, as well as being aware of their difficulties, perceive their parents really low aspirations and therefore express less favorable opinions about their own academic performance.

Finally, in response to *parental satisfaction with teachers* and based on the results, we can confirm that parents of NA children, as opposed to mainly those of children with ADHD, are those that show higher patterns of satisfaction. The fact that the educational needs of children with standardized performance are not significant and that they demand less attention, possibly means that teachers' performance is appropriate to them and therefore parents are satisfied in this regard (Gershwin et al., 2008). As for parents of children with LD, as we have seen, results indicate that the pattern of satisfaction is quite similar to that of parents of NA children. Possibly, the lack of a clear diagnosis and treatment of LD at the time of the study, made the parents of these pupils unaware that their children had significant learning problems, which is one of the reasons that could explain the level of overall satisfaction. Nevertheless, compared to the NA group, these parents identified a shortage of professional competence of teachers as well as a considerable lack of interest in their children's learning.

In short, this study confirms a trend indicating that contextual family elements are the most affected, and shows characteristics that are less favorable for learning in families in which children have ADHD or LD. These contextual elements emerge as potential risk factors to control. Therefore, these variables require greater empirical attention in the immediate future, in order to provide comprehensive treatment optimized for these pupils and their families. Similarly, we confirmed that the way family life is perceived is not the same for parents as for children, thus providing an overview of the specific needs of each family member, which may facilitate the establishment of specific interventions adapted to each particular case.

5. Acknowledgments

During this research study, we received competitive funds from the Spanish Ministry of Education, Science and Innovation (MICINN) (EDU2010-19250 / EDUC) for 2010-2013, and Excellence Research Group funds from the Junta de Castilla y León (GR259), with FEDER funds from the European Union for 2009-2010-2011 (BOCyL 27 on April 2009). Both were awarded to the Director/Main Researcher (J. N. García). We are very grateful to Victoria Rosa Sturley for her help with the English version.

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Xía, N. (2010). *Family factors and student outcomes*. Santa Mónica: Pardee RAND graduate school.



Learning Disabilities

Edited by Dr. Wichian Sittiprapaporn

ISBN 978-953-51-0269-4
Hard cover, 364 pages
Publisher InTech
Published online 14, March, 2012
Published in print edition March, 2012

Learning disability is a classification that includes several disorders in which a person has difficulty learning in a typical manner. Depending on the type and severity of the disability, interventions may be used to help the individual learn strategies that will foster future success. Some interventions can be quite simplistic, while others are intricate and complex. This book deserves a wide audience; it will be beneficial not only for teachers and parents struggling with attachment or behavior issues, but it will also benefit health care professionals and therapists working directly with special needs such as sensory integration dysfunction.

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In order to correctly reference this scholarly work, feel free to copy and paste the following:

Patricia Robledo-Ramón and Jesús-Nicasio García-Sánchez (2012). The Family Environment of Students with Learning Disabilities and ADHD, Learning Disabilities, Dr. Wichian Sittiprapaporn (Ed.), ISBN: 978-953-51-0269-4, InTech, Available from: http://www.intechopen.com/books/learning-disabilities/the-family-environment-of-students-with-learning-disabilities-and-adhd

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