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BACKGROUND : Sleep disorders have been associated with poor academic achievement and behavioral problems in children with typical development. Children with developmental disabilities, such as language impairment (SLI), Attention Deficit Hyperactivity Disorder (ADHD) and learning disabilities (LD), are at risk for academic failure but there is little information about associations between sleep disorders and inattention and hyperactivity in these children, in particular children who are Latino and African American.

OBJECTIVES

- 1) To assess sleep problems in all school age children evaluated and diagnosed by multidisciplinary university affiliated center in 2012 with LD and/or SLI.
- 2) To compare demographics, developmental diagnoses, inattention and hyperactivity for children with and without reported sleep difficulties.

DESIGN/METHODS: Retrospective chart review of all children evaluated at a University Affiliated clinic in 2012. Children with autism and intellectual disabilities were excluded
 Data included:

- Demographics and clinical diagnoses
- Intake questionnaire completed by parents, including parental report if child had sleep problems (yes/no) and what type
- Parental ratings of behavior: Vanderbilt Assessment Scale, VAS, including attention and hyperactivity/impulsivity
- Teacher ratings of behavior: Child Attention Problems, including attention and overactivity

Statistical analysis included chi-square, t-test, and non parametrics and logistic regression.

RESULTS

Total number of children=101

Of the 101 children, 95 had complete data; 48 had sleep problems, including difficulties falling asleep (n=15), snoring (n=18) and nightmares (n=15).

	Total N=101	Children with sleeping problems N=48	Children without sleeping problems N=47	p
<i>Demographics</i>				
Age at dx	9.5 ± 2	9.7 ± 1	9.4 ± 1	0.4
Male/female	60/41	33(69%)/15(31%)	21(45%)/26(55%)	0.001
Bilinguals Spanish-Eng	32	15 (32%)	17 (36%)	0.6
<i>Ethnic groups</i>				
White	6	2 (4%)	4(8%)	
Hispanic	63	31(64%)	32(68%)	
African American	18	8 (16%)	10 (21%)	
Other	8	7 (15%)	1 (2%)	
Level of Mat Ed				0.005
Less HS	18	7 (15%)	11 (26%)	
HS grad	18	5 (15%)	13 (31%)	
Some College	28	16 (34%)	12 (28%)	
College grad	10	6 (13%)	4 (9%)	
AD	13	11 (23%)	2 (5%)	
<i>Developmental Diagnosis</i>				
ADHD inattentive type	10	6 (60%)	4 (40%)	0.5
ADHD	47	26 (54%)	17 (36%)	0.1
Learning Disabilities	24	10 (20%)	14 (20%)	0.3
SLI	75	39 (81%)	35 (75%)	0.6
Repeated grade	23	12 (25%)	11 (23%)	0.8
<i>Behaviors:</i>				
Parental report of inattention(VAS)	33	21 (51%)	12 (27%)	0.02
Parental report of hyperactivity/impulsivity(VAS)	15	7 (17%)	8 (18%)	0.8
Teacher report of inattention	45	23 (49%)	22 (48%)	1
Teacher report of overactivity	26	16 (34%)	10 (22%)	0.2

Children who had trouble falling asleep (n=15) were more likely to repeat the grade (8/15 53%) than those with other type of sleeping problems (4/33 12% p=0.004), or no sleeping problems (11/47 23% p=0.008).

Regression, Dependent Variable: sleeping problems

Independent Variables	B	95 CI
Male	2.4	0.9-6.7
Level Maternal Education	1.6	1.07-2.4
Inattention (parental VAS)	3.1	1.1-8.6

The association between sleep problems and parental report of inattention remained significant after adjusting for gender and level of maternal education

CONCLUSIONS:

In an urban, largely minority, sample of children diagnosed with learning disabilities and/or language impairment, there was a strong association between sleep disturbances and inattention as indexed by parental ratings. Children who had difficulties falling asleep were more likely to have repeated a grade. This group of children appears to be particularly vulnerable academically. The significant associations between sleep disturbances, reduced attention and academic failure in these children needs to be further explored.