

Attention Deficit Hyperactivity Disorder among Children with Speech Difficulties

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KEYWORDS

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ABSTRACT

Abstract: Speech sound disorders and attention deficit / hyperactivity disorder are developmental disorders that can significantly impact academic success. The comorbidity of these disorders may substantially add to the difficulties experienced by the child and require a combined treatment approach. **Objectives:** (1) to assess sociodemographic characteristics of children's with speech difficulties (2) to assess attention deficit hyperactivity disorder and speech difficulties (3) to identify the relationship between attention deficit hyperactivity disorder and speech difficulties. **Methodology:** A descriptive cross-sectional study design was carried out in Baghdad Teaching Hospital. A non- probability (purposive) study sample of (300) child, who attended Hearing and Speech Center for the period from 12/April/2023 to 25/January/2024. The Questionnaire which is composed of: Socio-demographic characteristics, scales of behavioral problem, attention deficit hyperactivity disorder. **Results:** The study results reveal that the children experiencing severe attention deficit hyperactivity disorder and that significant relationship have been reported among speech sound disorder with attention deficit hyperactivity disorder at $p\text{-values}= 0.046$, also indicates that there was significant relationship among childhood apraxia and attention deficit hyperactivity disorder at $p\text{-values}= 0.007$. **Conclusion:** The children experience severe of attention deficit hyperactivity disorder, the significant relationship has been reported among speech sound disorder with attention deficit hyperactivity disorder, also indicates that there was significant relationship among childhood apraxia and attention deficit hyperactivity disorder. **Recommendations:** An intervention program to be planned accordingly and areas of deficit will be targeted in therapy. Liaison with parents and school teachers is indicated in order to achieve the child's maximum potential.

1. Introduction

Attention Deficit Hyperactivity Disorder (ADHD) refers to a cluster of pronounced difficulties in the areas of inattention, distractibility and hyperactivity that lead to significant impairment in academic and social functioning. The prevalence estimate of ADHD is as wide as 3%-10% in school age children and it is identified as one of the most commonly diagnosed clinical conditions affecting the students. Two-thirds of children with ADHD have an additional coexisting disorder and more than one-third have at least three comorbid conditions e.g., anxiety, conduct disorders, depression, and learning disability, while estimates of the overlap between speech difficulties and ADHD vary from as low as 8% to as high as 90%. Speech sound disorders is often comorbid, the approximately 40%–60% of children with speech sound disorders at preschool and 11%–15% of 6-year-old children with speech sound disorders presenting with language impairment. (1). Speech and language difficulties, a phenomenon that can hinder communication and learning, affect a large number of school-age children. It is estimated that approximately 7 percent of all children at some point suffer from some form of these difficulties, with boys being affected at a much higher rate than girls. It has long been recognized that a degree of comorbidity between speech, language difficulties (SLD) and social, emotional and behavioral problems (2). The speech difficulties can contribute to behavioral problems, if a child does not have the vocabulary or sound production skills to clearly express their thoughts and needs, this can cause them frustration they may be more likely to express this frustration in another way: yelling, crying, hitting especially in a situation where they feel strongly (3).

2. Methodology

A descriptive cross-sectional study design was carried out in Baghdad Teaching Hospital. A non-probability (purposive) study sample of (300) child, who attended Hearing and Speech Center. Data collection: Was done through by interview the questionnaire underlying the present study, Questionnaire format about the behavioral problems was designed and developed by the researcher

after reviewing related literatures, previous studies and according to the Child Behavior Checklist CBCL/6-18 (used with children 6 to 18), is made up of eight syndrome scales anxious/depressed, withdrawn, somatic complaints, social problems, thought problems, attention problems, rule-breaking behavior and aggressive behavior, the questionnaire which is composed of fourth parts. Validity of the instrument was established through a panel of (16) experts, and reliability by calculating the Cronbach's alpha. The data were analyzed approach by using (SPSS 26) using descriptive and inferential statistical test for data analysis.

Ethical consideration:

The researcher was explained the purpose of the study for every parent before participation, oral consent was obtained from every parent prior to data collection. Parents were assured that the study maneuver will cause no actual or potential harm to study sample.

3. Results and Discussion

Table (1): Socio-demographic Characteristics of Children's with Speech Difficulties

No	Characteristics	f	%
1	Age (years) M±SD= 8.7±2.4	6 – less than 8	41.7
		8 – less than 10	21.7
		10 – less than 12	16.8
		12 – less than 14	20
		Total	100
2	Gender	Male	73
		Female	27
		Total	100
3	Birth order	First	26.4
		Second	41
		Third	25.3
		Fourth	4.3
		Fifth or more	3
		Total	100
4	School grade	Not registered	28.7
		First	6
		Second	14
		Third	10.7
		Fourth	10
		Fifth	14.3
		Sixth	8.3
		Seventh	5.3
		Eighth	2.7
		Total	100

No: Number, f: Frequency, %: Percentage, M: Mean, SD: Standard deviation

The finding in table (1) shows that children were with age 8.7 ± 2.4 years in which 41.7% of them seen with age group of 6-less than 8 years. Regarding gender, 73% of children were males and remaining were females (27%).The birth order of children refers to second born among 41% of them followed by

first born among 26.4%. Concerning to school grade, 28.7% of them were not registered; 14.3% of them were from fifth grade, 14% from second grade, and 10.7% were from third grade.

Table (2): Types of Speech Disorders among Children with Speech Difficulties

No	Speech disorders		f	%
1	Stuttering	No	190	63.3
		Yes	110	36.7
		Total	300	100
2	Speech sound disorders	No	181	60.3
		Yes	119	39.7
		Total	300	100
3	Childhood apraxia of speech	No	241	80.3
		Yes	59	19.7
		Total	300	100
4	Orofacial myofunctional disorders	No	300	100
		Yes	0	0
		Total	300	100
5	Dysarthria	No	300	100
		Yes	0	0
		Total	300	100

No: Number, f: Frequency, %: Percentage

The table (2) indicates that 36.7% of children having stuttering; speech sound disorders were prevalent among 39.7%; childhood apraxia of speech prevalent among 19.7%; orofacial myofunctional and dysarthria were not reported among children.

Table (3): Assessment of Attention Deficit Hyperactivity Disorder among Children with Speech Difficulties

List	Attention deficit hyperactivity	Scale	f (%)	M	Assess.
1	Can't sit still, restless, or hyperactive	Not true	52(17.3)	1.38	Severe
		Somewhat true	81(27)		
		Certainly true	167(55.7)		
2	Fails to finish things they start	Not true	22(7.3)	1.66	Severe
		Somewhat true	59(19.7)		
		Certainly true	219(73)		
3	Poor school work or academic achievement	Not true	79(26.3)	1.29	Moderate
		Somewhat true	55(18.3)		
		Certainly true	166(55.3)		
4	Can't concentrate or can't pay attention for long (easily distracted)	Not true	15(5)	1.69	Severe
		Somewhat true	62(20.7)		
		Certainly true	223(74.3)		

5	Acts too young for age	Not true	10(3.3)	1.89	Severe
		Somewhat true	12(4)		
		Certainly true	278(92.7)		
6	Constantly fidgeting or squirming in seat (his body is in constant motion while he is sitting)	Not true	48(16)	1.39	Severe
		Somewhat true	87(29)		
		Certainly true	165(55)		

M Mean, Assess: Assessment

Mild= 0 – 0.66, Moderate= 0.67 – 1.33, Severe= 1.34 - 2

The table (3) presented the items of attention deficit hyperactivity disorder among children; the mean scores indicate severe among all items except item 3 that show moderate (Poor school work or academic achievement).

Table (4): Relationship between Attention Deficit Hyperactivity Disorders with Speech Difficulties

Attention Deficit Hyperactivity Disorders	Speech difficulties			
	Correlation Coefficient	Stuttering	Speech sound disorder	Childhood apraxia
	Spearman	0.047	0.115*	0.157*
	Sig. (2-tailed)	0.416	0.046	0.007

* Correlation is significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

The table (4) indicates that significant relationship have been reported among speech sound disorder with attention deficit hyperactivity disorder at p-values= 0.046. The finding also indicates that there were significant relationships among childhood apraxia and attention deficit hyperactivity disorder at p-values= 0.007.

The finding in table (1) shows that children were with $M \pm SD = (8.7 \pm 2.4)$ in which (41.7%) of them seen with age group (6 – less than 8). These results are consistent and supported by Veronica Maggio et al., (2013), in a study about Behavior Problems in Children with Specific Language Impairment, Buenos Aires, Argentina (4). Who stated that children's age ranged from (2.1 to 7.9) years and $M \pm SD = (4.7 \pm 0.1)$. Regarding gender, (73%) of children were males and remaining (27%) were females. These results are consistent with the study conducted by Marina Leite et al., (2016) (5) who reported (83.3%) were male, while (16.7%) of children were female. The birth order of children refers to second born among (41%) of them followed by first born among (26.4%). These results are consistent and supported by Mohadese G Arefi et al., (2022) in Mashhad City, Iran (6). The results were shown (51%) of children were first born, (31.3%) of them were second born. Concerning to school grade (28.7%) of them were not registered; (14.3%) of them were from fifth grade, (14%) from second grade, and (10.7%) were from third grade. These results are consistent and supported by Mohadese G Arefi et al., (2022) in Mashhad City, Iran. The results were shown (17.4%) of children preschooler, (31.2%) second grade and (21.4%) were third grade.

The table (2) indicates that (36.7%) of children having stuttering; speech sound disorders were prevalent among (39.7%); childhood apraxia of speech prevalent among (19.7%); These results are consistent and supported by Ali H Obeid et al., (2014) in Al-Hilla city, Iraq (7). The results show the percentage of speech disorder by gender of children, stuttering in male (69.2%) and (30.8%) of female, while speech sound disorders in male was (62.8%) and (37.2%) of female. The other study conducted by Sedighah A Karbasi et al., (2011) in Yazd, Iran (8). The prevalence of total speech

disorders was (14.8%) among whom (13.8%) had speech-sound disorder, (1.2%) stuttering and (0.47%) voice disorder. The prevalence of speech disorders was higher than in males (16.7%) as compared to females (12.7%).

The table (3) presented the items of attention deficit hyperactivity disorder among children; the mean scores indicate severe among all items except item 3 that show moderate (poor school work or academic achievement). The prevalent among children with speech and language difficulties are: the can't sit still, restless, or hyperactive (55.7%), fails to finish things they start (73%), poor school work or academic achievement (55.3%), can't concentrate or can't pay attention for long (easily distracted) (74.3%), acts too young for age (92.7%), constantly fidgeting or squirming in seat (his body is in constant motion while he is sitting) (55%). These results are consistent with the study conducted by Ahmed Elhassan Hamid Hassan (2016) in a study of Prevalence of Attention Deficit and Hyperactivity Disorder in Children with Language Impairments and Speech Disorders (10), Jazan, K.S.A Kingdom of Saudi Arabia. The finding revealed that the most hyperactivity disorders syndromes prevalent among children with speech and language difficulties are: unable to stay in the seat for a long time (46.7%), failure to end the tasks (60%), easy dispersion of attention (73.3%), fidget and squirm in his seat (66.7%).

The table (4) indicates that significant relationship have been reported among speech sound disorder with attention deficit hyperactivity disorder at p -values= 0.046. The finding also indicates that there were significant relationships among childhood apraxia and attention deficit hyperactivity disorder at p -values= 0.007. These results are consistent with the study conducted by Barbara A. Lewis et al., (2012) in a study about Speech-Sound Disorders and Attention-Deficit/Hyperactivity Disorder Symptoms, Case Western Reserve University, Cleveland, Ohio (11). Who reported that significant relationship among speech-sound disorders with ADHD rating scale, the significant differences across groups were observed for the inattention scale, p -values= 0.013. In addition, significant differences across groups were observed on the hyperactivity/impulsivity score, p -values= 0.013. Finally, significant differences across groups were observed on the total scores, p -values= 0.004.

4. Conclusion

The study concluded that the children experience severe of attention deficit hyperactivity disorder, the significant relationship has been reported among speech sound disorder with attention deficit hyperactivity disorder, also indicates that there was significant relationship among childhood apraxia and attention deficit hyperactivity disorder.

Recommendations

The study recommended that the child with speech and language difficulties to be seen by a speech language pathologist (SLP). The SLP will assess the child to obtain a clear idea of the child's strengths and weaknesses in speech and language, also an intervention program to be planned accordingly and areas of deficit will be targeted in therapy. Liaison with parents and school teachers is indicated in order to achieve the child's maximum potential.

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