Association Between Behavioral Problems and Sociodemographic Characteristics among Children with Attention Deficit Hyperactivity Disorder

Sajjad Mohammed Taqi [1], Zeki Sabah Musihb [2]

[1] Academic Nurse /Pediatric Nursing Department/College of Nursing/ University of Kerbala, Iraq

Email: sajjad.mohammed@s.uokerbala.edu.iq

[2]Pediatric Nursing Department/College of Nursing/ University of Kerbala, Iraq

zaki.s@uokerbala.edu.iq

Received: 02/03/2025
Accepted: 10/04/2025
Published: 30/09/2025

DOI:
10.65682/kjnhs.v1.i3.106-123

Abstract

Introduction: Neurodevelopmental disorders, impact millions of children around the globe. The situation becomes much more challenging for the child and their family when they additionally struggle with behavioural, emotional, and social difficulties.

Objective: To assess the relationship between behavioral problems and Sociodemographic factors in children with ADHD.

Methodology: This study adopted a quantitative and descriptive approach, targeting Al-Sibtain Academy for Children with Autism Spectrum Disorder and Developmental Disorders within the sacred city of Karbala, Iraq, during the specified timeframe from the thirtieth of September, two thousand and twenty-four, to the thirtieth of February, two thousand and twenty-five. The research sample consisted of one hundred parents of children diagnosed with Attention-Deficit/Hyperactivity Disorder, selected according to a convenience sampling method (non-probability).

Results: the finding show It shows that the highest percentage of participating children are males (78%), the highest percentage of them are under six years old. There is a statistically significant between level of SDQ among children attributed to the mother's economic status (p=0.019), Also explains that there are statistically significant differences in the level of (SDQ) attributed to the educational level and type of disorder for children (p=0.008, 0.000) respectively. It explains that mean of emotional problems is (M± SD: 7.13±2.013), mean of Conduct problems is (M± SD: 5.56±1.387), mean of hyperactivity is (M± SD: 8.63±1.097), mean of Peer problems is (M± SD: 4.69±1.051), and mean of total difficulties score is (M± SD: 26.01±3.186).

Conclusion: Our study adds to the growing body of evidence that children with attention deficit hyperactivity disorder (ADHD) face difficulties in social and emotional regulation as well as conduct.

Keywords: Attention Deficit/Hyperactivity Disorder, Behavioral Problems, Children.

1. Introduction

Attention-deficit/hyperactivity disorder is still one of the most researched and contentious disorders, and it is now acknowledged as a lifelong disorder. The second most prevalent long-term condition in children. Under-standing the history and current standards of treatment of ADHD is crucial when's reading and putting the updated guidelines into practice(Wolraich et al., 2019). Attention-deficit/hyperactivity disorder (ADHD) is one of the most common neurodevelopmental disorders of childhood, characterized by inattention, hyperactivity–impulsivity, or a combination of both. About 7.0% to 10.2% of children worldwide(Frank, 2024). In primary school children, deviations from typical developmental functionality are apparent through academic failure, often attributed to attentional deficits and coexisting learning difficulties. Additionally, these children may experience peer rejection, low self-esteem within the school setting, and challenges in behavior management by caregivers in both home and social contexts(Bondopadhyay et al., 2022). Estimates put an average rate of behavior problems in ADHD children between 40 and 70 percent. Having ADHD in and of itself may induce ODD or CD to appear abnormally more quickly in children. A positive parent-child connection, according to recent research, can reduce behavioral issues in children with ADHD(Climie & Mitchell, 2017). Daydreaming, being easily distracted, and having trouble concentrating on one task for an extended amount of time are all signs of ADHD's inattention symptom, which is driven by a lack of desire. hyperactivity manifests as impatience, excessive talking, and fidgeting, while aggression and trouble controlling impulsive behavior might affect social interactions and family life(El-Sayed, 2019). ADHD is frequently identified in preschool-aged children. The disorder is thought to last into adulthood and beyond adolescence in up to half of the impacted children. The severity of symptoms and how they were treated as children can predict how long they will last. With the right care, quality of life can be considerably enhanced. Since medication is the mainstay of treatment for ADHD, medication nonadherence presents a significant challenge for those who are treating these children. For treatment to have an impact, adherence is crucial(Safavi et al., 2019). The percentage of parents who say that their children with ADHD also struggle other mental health issues, such as mood disorders (7–50 percent), multiple anxiety disorders (27–33 percent), oppositional defiant disorder (45–65 percent), or conduct disorder (14–23 percent). children with ADHD are more likely to have negative outcomes, such as reduced quality of life and school absenteeism, and around 25% of school-aged children with ADHD also have externalizing comorbidities(Lycett et al., 2015). The parent and child have a vital relationship: parents provide knowledge, money, emotional support, and a role model for a child to learn dependence. Sometimes children with illnesses such as ADHD may even intensify these arguments. Parenting children with ADHD is a highly stressful but demanding experience for many parents because not all children's behavioural challenges look like traditional ADHD challenges (Climie & Mitchell, 2017). World Health Organization estimated there were 39 million people who are hurt by the ADHD around the world. Attention deficient hyperactivity disorder is often 'comorbid' with low self-esteem, psychiatric illnesses, and drug abuse, in addition to learning disabilities and disruptive behavior disorders. Children with ADHD cost health care twice to four times more, on average. ADHD costs the US economy $32 billion every year both through lost work time and higher medical costs(Fleming et al., 2017). The characteristics of conduct disorder include intentional hostility (e.g., bullying), property damage, deceitfulness or thievery, and significant rule violations (e.g., running away from home, chronic truancy). Some see conduct disorder as a distinct condition from oppositional defiant disorder (ODD), while others view it as a

continuum of the same problem. Conduct disorder may present as violence, exemplified by instigating physical altercations, or by non-aggressive behaviors such as truancy, theft, deceit, and absconding from home(Austerman, 2015). Uncertainty surrounds the origins of several EBPs in children. According to several studies, the likelihood of getting any of these conditions is increased by a mix of hereditary susceptibility and problematic environmental variables. Perinatal, maternal, familial, parental, socioeconomic, and individual risk factors are included on this list (Ogundele, 2018). An estimated 70–80% is hereditary, making attention deficit hyperactivity disorder (ADHD) one of the most inherited neurodevelopmental illnesses. Dysregulation of neurotransmitter systems, such as those involving both norepinephrine and dopamine, which impact the regulation of emotions and impulses, is a common cause of behavioural issues. Research points to variations in the DAT1 and DRD4 genes as potential causes of these dysfunctions (Faraone & Larsson, 2019). It is well-known that lead, a common neurotoxicant, disrupts brain development. Intelligence deficits, attention deficits, and problems with behavior have been linked to lead exposure, even at low levels that are common in everyday life. there is evidence linking lead exposure in the environment to conduct problem and attention deficit/hyperactivity disorder (ADHD) (Hong et al., 2015). Anger, impatience, and mood swings are traits of the neuropsychological temperament profile that some children with ADHD exhibit. Factors that increase the likelihood of adverse outcomes include being born prematurely, experiencing problems during pregnancy, having anoxic events, not getting enough iron and zinc in the diet, and not engaging in healthy social interactions. The familial nature of the disease is often evident during the clinical interview(Austerman, 2015). Professional diagnoses of Attention Deficit/Hyperactivity Disorder were made for children in the ADHD group by licensed pediatricians, child psychiatrists, or psychologists. Discussions with both parents and children are used to back up the DSM-V diagnostic criteria in the United Kingdom (Hong et al., 2015). To make a clinical diagnosis of EBPs, it is essential to conduct a thorough assessment by recording a child's medical history and observing their behaviour. As a general rule, this should include things like physical health, mental health, familial, social, academic and psychological background. Motor abilities, cognition, hearing, dysmorphic traits, neuro-cutaneous stigmata, and vision should all be evaluated during a neurological and physical examination (Ogundele, 2018).

Management of behavioral problems:

Non-pharmacological Interventions: The wide range of physical, psychological, educational, and social problems young children face necessitates a multifaceted approach to their treatment. Some examples of these therapies include medication, behavioral counseling, and parent education. When it comes to behavioral issues in children and disruptions in family functioning, however, medication treatment is insufficient (Khodabakhshi Koolaee et al., 2015). Play has eight main therapeutic uses: enhancing relationships, communicating, regulating emotions, managing stress, boosting ego, becoming ready for life, and self-actualization. Everyone, regardless of age, may benefit from playing. Aside from being a great stress reliever and a great way to learn and grow, play also fosters healthy relationships and dialogue. Toddlers learn to control their emotions, persevere through setbacks, and develop intrinsic skills via play (Knell, 2015). Among the many non-pharmacologic therapies for emotional illnesses, particularly depression and behavioural issues, cognitive behavioural therapy (CBT) ranks high. When it comes to encouraging desirable behaviour patterns, CBT uses a mix of behavioural and cognitive learning concepts. Recent research on cognitive

behaviour therapy (CBT) programs for children in schools has shown that they significantly reduce disruptive behaviours (Ogundele, 2018). Removing artificial colorings and sodium benzoate preservatives from the diet has been shown to be more effective than behavior management for long-term relief of ADHD symptoms. Supplementing stimulants with omega-3 fatty acids has been shown to effectively alleviate central symptoms of ADHD(Austerman, 2015).

pharmacological Interventions:

Stimulants: Methylphenidate (immediate- or modified-release) is the preferred drug for children and adolescents aged 5 years and up. It is recommended to consider switching to lisdexamfetamine if the desired improvement is not achieved after six weeks of therapy with the appropriate dosage. If the lengthy duration of action of lisdexamfetamine is not tolerable (e.g., causes lack of sleep), dexamfetamine is an option to consider (Chaplin, 2018). Amphetamines are also very successful in lowering the symptoms of attention-deficit/hyperactivity disorder (ADHD). Several studies have shown that these drugs are especially helpful for people who do not respond to methylphenidate administration. On the other hand, the potential for abuse and dependence calls for extreme alertness (Faraone, 2018).

2. Objectives of the study

1- Find out the relationship between behavioral problems and sociodemographic characteristics in children with ADHD.

2- Identify the most common behavioral problems in children with ADHD.

3. Methodology

The Research Design:

A descriptive study utilizing a correlational design was performed to evaluate the association between sociodemographic characteristics and behavioral issues among children diagnosed with attention deficit hyperactivity disorder at the Imam-Hussein Institute and Al-Sibtain Foundation for Autism and Developmental Disorders in Holy Kerbala City, that extend from 30th September 2024 to 30th February 2025.

The Samples of the Study:

A nonprobability (convenience) sample of 100 children out of 130 in total, in order to gather information about the disease, a questionnaire was given to parents based on their availability. The questionnaire was filled out by the parents using self-reports style that were distributed to them. used Behavioral Problems Questionnaire (Goodman, 1997) , and the Once all parents gave their agreement to participate in the study, the records of children with ADHD were reviewed. The institution provided the essential statistics on ADHD in both males and girls.

Administrative Arrangements: Formally, the current research must start with a legal request filed to the appropriate institutions in this area of study. The title, objectives and constructed questionnaire was presented to the College of Nursing's Scientifics Research Ethics Committee, which reviewed the study instruments (questionnaire) and approved the study's conduct.

The Study Instrument

The questionnaire is based on the opinions of the experts as well as a thorough examination of relevant literature and past studies (Wannapaschaiyong et al., 2024).

Part I : Socio-demographic Characteristics of the parents and their children:

First: Characteristics of the studied parents such as age, residency, degree of education, occupational and economic status.

Second: Characteristics of the studied children such as age, sex, level of education for child, number of sibling and child order in the family.

Part II: parents Information's about Behavioral problems among children with ADHD

Strength and Difficulties Questionnaire (SDQ):

The 25 traits that make up the SDQ are arranged into five scales. There are three possible ratings for each of the 25 items: Never (0), Sometimes (1), or Always (2). Additionally, there are five items on each of the SDQ scales, with scores ranging from 0 to 10. The fifth scale assesses prosocial activities, while the first four measure emotional symptoms, behavioral issues, hyperactivity–inattention, and issues with peer relationships. A total difficulty score is then produced by adding the scales, which include both positively and negatively phrased items. Five sub-scales are intended to be created from the 25 components. There are five questions on each of the five subscales. Except for the pro-social behavior sub-scale, higher scores indicate greater difficulties. The overall problems score, which can vary from 0 to 40, was produced by adding the scores for every scale except the pro social scale (Goodman, 1997).

The Instrument Validity

A panel of 15 experts in the study's fields reviewed the instrument to improve its validity. The study's instruments were reviewed by professionals, who added and removed items. After considering experts' opinions and recommendations, the instrument is valid.

Reliability: Ten parents and their children were subjected to reliability testing as a statistical analysis technique to ascertain the concordance of the questionnaire items through the use of the reliability coefficient. Cronbach's alpha indicated that the scale maintained an acceptable level of internal consistency, as demonstrated below: Behavioral Problems 30 item value is 0.862 . According to the alpha Cronbach test, the questionnaire was successfully designed and is high reliable.

Data Collection Methods

Data were obtained through self-reports given to parents, and a questionnaire was filled by parents. The period from December 2024 to January 2025, conversation was conducted with parents who were attended to the Al-Sibtain Academy and Imam Hussein Institute for Children with Autism and Developmental Disorders and given the questionnaire after agreement of parents to participate in the research, then the examiner clarifying the purpose of the investigation in simple way. data collected from parents who visited care centers in the morning and when receiving their children at the end of the work day, noting that some questionnaires were sent with the child and were filled out at home by the parents.

Data Analysis: The gathered data of the research was analysed using Microsoft Excel (2010) and the SPSS (Statistical Package of Social Sciences) version 25. **Descriptive approach:** Frequency (N),Percentage (%), Mean (M), Standard deviation (SD), Mean of scores (M.s.). **Inferential approach**: **First:** Independent sample (t) test: To evaluate the significance differences in children' Sleep Habits and Behavioral Problems according to their socio-demographic variables that divided into two categories. **Second:** One Way ANOVA test: To evaluate the significance differences in children' Sleep Habits and Behavioral Problems according to their socio-demographic variables, that divided into three categories or more. **Third:** Pearson Correlation Test: to find out how strong and in what direction two continuous variables are linearly connected.

4. Results

Table (1) shows the distribution of mothers in the sample according to their demographic data. It shows that the ages of the highest percentage of them range between (30 - 35) years (41%), and their educational level is university (28%), and the highest percentage of them are unemployed (71%), reside in the city (82%), and the income of the highest percentage of them is barely sufficient (54%), and shows the distribution of fathers in the sample according to their demographic data. It shows that the ages of the highest percentage of them (>35) years (60%), and their educational level is university (35%), and the highest percentage of them are unemployed (53%), reside in the city (82%), and the income of the highest percentage of them is barely enough (45%). **Table (2)** shows the distribution of children in the sample according to their demographic data. It shows that the highest percentage of participating children are males (78%), the highest percentage of them are under six years old, most of them have one or two brothers (45%), the highest percentage of them are third or above (52%), and most of them are (in foster care) (83%). **Table (3)** shows the strengths and difficulties questionnaire (SDQ) subscale scores and total difficulties scores. It explains that mean of emotional problems is (M± SD: 7.13±2.013), mean of Conduct problems is (M± SD: 5.56±1.387), mean of hyperactivity is (M± SD: 8.63±1.097), mean of Peer problems is (M± SD: 4.69±1.051), mean of prosaically behavior is (M± SD: 5.73±1.625), and mean of total difficulties score is (M± SD: 26.01±3.186). **Table (4)** shows the distribution of Children in the sample according to their level of behavioral problems. It shows that the highest percentage (94%) has a high level of behavioral problems related to the hyperactivity dimension, followed by (46%) who suffer from a high level of behavioral problems related to the Conduct problems dimension, then (18%), (12%) and (5%) of them suffer from a high level of behavioral problems related to the prosaically behavior dimension, the emotional problems dimension, and the peer problems dimension, respectively. **Table (5)** shows the differences in the level of SDQ among children according to their mothers' demographic characteristics, it explains that there are statistically significant differences in the level of (SDQ) attributed to the monthly income (p=0.019). While there are no statistically significant differences attributed to other demographic variables. **Table (6)** shows the differences in the level of SDQ among children according to their fathers' demographic characteristics, it explains that there are statistically significant differences in the level of (SDQ) attributed to the monthly income (p=0.024). While there are no statistically significant differences attributed to other demographic variables. **Table (7)** shows the differences in the level of SDQ among children according to their demographic characteristics, it explains that there are statistically significant differences in the level of (SDQ) attributed to the educational level and type of disorder (p=0.008, 0.000) respectively. While there are no

statistically significant differences attributed to other demographic variables. **Table (8)** shows multivariate linear regression analysis for association between potential demographic characteristics and SDQ scores. Some demographic variables were associated with significant predictors of the (SDQ) score, as children had a negative association with the (SDQ) score , those children whose parents had a low monthly income (B=-0.659, -0.162). (p=0.049, 0.012). While children had a positive association with the (SDQ) score ,those children who attended to Kindergarten (B= 0.130, p=0.000). For the type of disorder, the multilinear analysis indicated that children had significant predictors of the (SDQ) score that were negatively associated with the type of disorder, especially in those with two types of disorder (Hyperactivity-Impulsivity+ Inattention) (B=2.033, p=0.000).

Table 1: Distribution of mothers and fathers in the sample according to their demographic variables.

Demographic data	N=100	%	N=100	%
Age (years)	N (mothers)	%	N (fathers)	%
<30	27	27	15	15
30-35	41	41	25	25
>35	32	32	60	60
Educational level	N	%	N	%
Illiterate	0	0	0	0
Primary	25	25	13	13
Intermediate	23	23	24	24
Secondary	16	16	12	12
Institute	8	8	16	16
University	28	28	35	35
Occupation	N	%	N	%
employed	29	29	47	47
Unemployed	71	71	53	53
Place of residence	N	%	N	%
city	82	82	82	82
rural	18	18	18	18
Monthly Income	N	%	N	%
enough	28	28	37	37
Barely enough	54	54	45	45
Not enough	18	18	18	18

Table 2: Distribution of children in the sample according to their demographic variables.

Demographic data	N=100	%
Gender	N	%
Male	78	78
Female	22	22
Age (years)	N	%
3-6	52	52
6-9	31	31
9-12	17	17
Number of brothers	N	%
no	15	15
One or two	45	45
Three or four	23	23
Five or more	17	17
Ranking	N	%
First	28	28
Second	20	20
Third and above	52	52
educational level	N	%
Kindergarten	83	83
Primary	17	17
Type of disorder	N	%
Hyperactivity-impulsive	16	16
Inattention	17	17
Both	67	67

Table 3: The strengths and difficulties questionnaire (SDQ) subscale scores and total difficulties scores.

SDQ domains	Mean	SD
Emotional problems	7.13	2.013
Conduct problems	5.56	1.387
Hyperactivity	8.63	1.097
Peer problems	4.69	1.051
Prosaically behavior	5.73	1.625
Total difficulties score	26.01	3.186

Table 4: Distribution of Children in the sample according to their level of behavioral problems.

SDQ domains	Low need		Some need		High need	
	N	%	N	%	N	%
Emotional problems	78	78	10	10	12	12
Conduct problems	23	23	31	31	46	46
Hyperactivity	0	0	6	6	94	94
Peer problems	45	45	50	50	5	5
Prosaically behavior	57	57	25	25	18	18
Total difficulties score	2	2	28	28	70	70

Table 5: Differences in the level of SDQ among children according to their mothers' demographic characteristics.

Demographic characteristics		N	Mean M	Standard Deviation D	T/F	P. value
Age	<30	27	26.11	3.004	F 0.146	0.865
	30-35	41	25.80	3.203		
	>35	32	26.18	3.392		
Educational level	Primary	25	25.92	2.465	F 0.225	0.924
	Intermediate	23	26.00	3.837		
	Secondary	16	25.75	3.022		
	Institute	8	25.37	3.777		
	University	28	26.42	3.270		
Occupation	employed	29	26.31	2.953	T 0.601	0.486
	Unemployed	71	25.88	3.288		
Place of residence	city	82	25.96	3.214	T 0.311	0.788
	rural	18	26.22	3.135		
Monthly Income	enough	28	26.21	3.083	F 4.119	0.019*
	Barely enough	54	25.33	3.156		
	Not enough	18	27.72	2.886		

*p<0.05 **p<0.01 , ANOVA .

Table 6: Differences in the level of SDQ among children according to their fathers' demographic characteristics.

Demographic characteristics		N	Mean M	Standard Deviation D	T/F	P. value
Age	<30	15	25.26	3.390	F 0.476	0.623
	30-35	25	26.16	3.519		
	>35	60	26.13	3.016		
Educational level	Primary	13	25.38	2.534	F 0.809	0.522
	Intermediate	24	26.25	3.287		
	Secondary	12	26.33	3.676		
	Institute	16	24.93	3.492		
	University	35	26.45	3.042		
Occupation	employed	47	25.70	3.099	T -0.909	0.365
	Unemployed	53	26.28	3.266		
Place of residence	city	82	25.96	3.214	T 0.311	0.788
	rural	18	26.22	3.135		
Monthly Income	enough	37	26.02	3.210	F 3.898	0.024*
	Barely enough	45	25.31	3.080		
	Not enough	18	27.72	2.886		

*p<0.05 **p<0.01 , ANOVA.

Table 7: Differences in the level of SDQ among children according to their demographic characteristics.

Demographic characteristics		N	Mean M	Standard Deviation SD	T/F	P. value
Gender	Male	78	25.97	3.078	T -0.210	0.257
	Female	22	26.13	3.616		
Age	<6	52	25.75	2.855	F 0.361	0.698
	6-9	31	26.25	3.161		
	>9	17	26.35	4.197		
Number of brothers	no	15	25.73	2.685	F 0.328	0.805
	One or two	45	26.00	2.884		
	Three or four	23	26.52	3.102		
	Five or more	17	25.58	4.444		
Ranking	First	28	25.50	2.603	F 0.509	0.603
	Second	20	26.10	4.063		
	Third and above	52	26.25	3.124		
educational level	Kindergarten	83	25.98	2.927	T 7.285	0.008*
	Primary	17	26.11	4.342		
Type of disorder	Hyperactivity-Impulsivity	16	23.37	2.446	F 12.533	0.000**
	Inattention	17	24.64	3.569		
	Both	67	26.98	2.766		

*p<0.05 **p<0.01 , ANOVA.

Table 8: Multivariate linear regression analysis for association between potential demographic characteristics and SDQ scores.

demographic characteristics	SDQ scores		
	B	P. value	(CI:95%)
Monthly income of mother	-0.659	0.049*	0.383, 1.498
Monthly Income of father	-0.162	0.012*	-0.291, 1.466
Educational level of children	0.130	0.000*	-1.562, 1.821
Type of disorder	2.033	0.000*	1.134, 2.638

5. Discussion

Children with ADHD struggle to regulate their actions and may have impairments in all areas of functioning. This condition is a lifelong impairment that impacts not only how well a person does in school but also their relationships at home and with their peers. As a result, it can have a negative impact on a person's emotional and social development, leading to difficulties with self-esteem and learning achievement.[5] Based on the demographic information collected, the results showed more than half of the children assessed (n=52; 52%) initially experienced signs of the disorder between the ages of three and six. It was shown that symptoms and indicators often started appearing at an average age of 4.7±1.5 years; this findings is consistent with a study concluded by (Abdelaziz Afifi Mohamed et al., 2023). This study found that in addition to age, other characteristics including sex, ethnicity and socioeconomic status are significant when determining the prevalence of ADHD. ADHD mostly affects boys in childhood and adolescence, with a male to female sex ratio of 4:1. ADHD was shown to be more likely in families with lower incomes, these findings are consistent with a research conducted by.[2] The results showed the prevalence of ADHD was greater in children who were the last in their family. According to the present study's findings, the risk of ADHD rises with the age of the mother and the likelihood of complications during being pregnant, which in turn raises the risk of ADHD in subsequent children, these results are in line with that study conducted by.[20] Regarding the residency the finding shows, the majority of parents (82%) reside in urban areas, while only18% live in rural areas. These results agree with a research done by.[21] The results of the current study showed the distribution of parents of children in the sample according to their Occupation. It shows that highest percentage of them are unemployed, which consistent with a research by.[5]

Analysis of the level of behavioral problems among children with ADHD and association with sociodemographic characteristics:

Attention Deficit Hyperactivity Disorder is typically linked with mental concurrent conditions including sleep difficulties and behavioral issues closely connected to criminal activity as well as a range of other social, emotional, and academic issues. It could foretell subsequent all-around mental health deficits like substance abuse, failure to graduate, bad marriage adjustment, low performance at work and low respiratory function.[5] The results of the current

study showed that emotionally and behavioral issues are more common in children with ADHD. Children with ADHD who receive adequate emotional and social support, such as counseling, parental guidance, or peer support, may be better equipped to handle emotional challenges, which is in line with our findings.[22] Disorder was present in over 50% of children with ADHD mixed type. Because of ADHD is defined by a lack of focus, excessive activity, and impulsivity; children diagnosed with this disorder may behave out aggressively, have inappropriate sexual relations, and commit other violations, therefore our results are in line with those.[5] The outcomes of this study found that among preschoolers with ADHD, hyperactivity is the most prevalent symptom, followed by emotional issues, and greater than preschoolers without ADHD. The results are in line with those of .[22] The results of the current study showed that the highest percentage of participating children suffer from a low level of behavioral problems related to the Prosaically behavior dimension. Despite their ADHD diagnosis, these children may retain fundamental prosocial tendencies, suggesting they can engage in positive interactions when given the right support. These results agree with study conducted by.[23] The results of the current study showed that the highest percentage of participating children suffer from a high level of behavioral problems as a total. Behavioral difficulties such as hyperactivity, impulsivity, and inattention are central features of ADHD, which naturally influence a wide range of behaviors; and ADHD often co-occurs with other conditions like anxiety, depression, or Oppositional Defiant Disorder (ODD), which can heighten the overall behavioral challenges, this study was in similarity with (Classi et al., 2012). The results of the current study explains that there are statistically significant differences in the level of (SDQ) attributed to their type of disorder. The type of ADHD could affect the severity and breadth of difficulties faced by the child, leading to variations in their SDQ scores. For example, children with combined-type ADHD might have more extensive difficulties across multiple domains, resulting in higher SDQ scores. This result consistent with study by (Clayton et al., 2020). The results of the current study explains that there are statistically significant differences in the level of (SDQ) attributed to their educational level. As children progress through different educational levels, their academic and social demands change. Higher educational levels may introduce greater challenges, potentially contributing to increased emotional, behavioral, social difficulties, which are reflected in higher SDQ scores, The present findings agree with a study by(Classi et al., 2012). The results of the current study explains that there are statistically significant differences in the level of (SDQ) among children with ADHD attributed to the monthly income of their Parents. Families with lower monthly income might face additional stressors, limited access to resources (such as specialized ADHD therapies or support services), or environmental factors that could contribute to higher SDQ scores, reflecting more pronounced difficulties; on other hand Higher income levels may allow for better access to healthcare, educational resources, and structured environments, which can help manage ADHD symptoms and behavioral challenges, potentially leading to lower SDQ scores, this finding similar to study findings done by (Flouri et al., 2017). The results of the current study showed that the highest percentage of participating children suffer from a moderate level of behavioral problems related to the Peer problems dimension. A moderate level indicates that while these children do face difficulties, they are not entirely isolated or struggling severely in their relationships. They might have some successful interactions but still encounter challenges in certain situations, The outcome of the present research supports with study done by (Chiraphadhanakul et al., 2016).

6. Conclusions

The results of our study provide more proof that children with ADHD exhibit conduct, social, and emotional challenges. ADHD is a highly complex condition, and it is essential to identify the distinct familial, personal, and parental characteristics of children with ADHD who display behavioural issues. Our research indicates that family structure, birth order, type of ADHD, degree of education, and financial level correlate with significant and diverse behavioural abnormalities in boys with ADHD. Further study is required to clarify the mechanisms for the early identification of children at risk for ADHD, effective therapy.

7. Recommendations

In order to raise knowledge of the disorder and the best ways to manage it, there has to be an extensive program of psychoeducation that involves the school staff and family. It is important to provide parent training and education programs that offer easy techniques for managing their child's behavior and improving the parent-child bond. For optimal management of mental health issues in children, interdisciplinary teams of specialists in psychology, neurology, developmental-behavioral pediatrics and child psychiatrists are required. In order to provide all-encompassing medical treatment. The school should be responsible for arranging transportation to and from the child's home in order to preserve the safety of the child. To help these children feel normal and stop bullying, it's important to get the word out and build social support networks. Follow up on the development of a guidebook on how to manage cases.

8. Limitation

It's possible that the generalizability of the study's findings to children with ADHD is limited. The main limitation of this research is its little size of sample. There is a possibility of bias in reporting since we used parent reports for behavioral evaluations. Differences in cultural norms, family stress, and knowledge of ADHD symptoms may all influence how others see a child's actions.

9. Acknowledgment

The researcher extends heartfelt gratitude to parents of these children and all members and administrators of the Al-Sibtain Academy for Children with Autism and Developmental Disorders for their invaluable contributions to this study by providing access to the necessary data.

10. Authors' contributions

The author contributed to the project by engaging in the design, collection, analysis, and interpretation of data. The author composed and rigorously refined substantial intellectual material, submitted the final version for publication, and accepted responsibility for every component of the work. The author reviewed and accepted the final version. The author assumes accountability for the accuracy of the data and the precision of the data analysis.

11. Conflict of interest statement

The authors declare that they have no competing interests.

12. Funding

No funding was received by the author(s) for doing the study or publishing this paper.

13. Availability of data and materials

The data used in this study are available from the corresponding author on request.

14. Generative AI disclosure

The content below was prepared without the aid of Generative AI.

15. Ethical Approval

The study protocol and official authorization have undergone independent review and received approval from the College of Nursing at the University of Karbala to proceed with the research (Code: IRB: CON-2024-052). The title, objectives, and finished questionnaire were submitted to the College of Nursing's Scientific Research Ethics Committee, which evaluated the study instruments (questionnaire) and granted approval for the study's running. Parents gave the researcher their explicit written consent. Before the participant's parents take part in the study, the researcher informs them of its purpose. the researcher further assured them that participation in the study was voluntary and that the data would be kept private and confidential during and after the study.

References

Abdelaziz Afifi Mohamed, A., Mahmoud Zaki, M., & Abdel Baseer Mahmoud, D. (2023). Relationship between Quality of Life and Sleep Habits in Children with Attention Deficit Hyperactivity Disorder. *Journal of Nursing Science Benha University*, *4*(1), 159–174. https://doi.org/10.21608/jnsbu.2023.274558

Austerman, J. (2015). ADHD and behavioral disorders: Assessment, management, and an update from DSM-5. *Cleveland Clinic Journal of Medicine*, *82*(11 suppl 1), S2–S7. https://doi.org/10.3949/ccjm.82.s1.01

Bondopadhyay, U., Diaz-Orueta, U., & Coogan, A. N. (2022). A Systematic Review of Sleep and Circadian Rhythms in Children with Attention Deficit Hyperactivity Disorder. *Journal of Attention Disorders*, *26*(2), 149–224. https://doi.org/10.1177/1087054720978556

Chaplin, S. (2018). Attention deficit hyperactivity disorder: diagnosis and management. *Progress in Neurology and Psychiatry*, *22*(3), 27–29. https://doi.org/10.1002/pnp.511

Chiraphadhanakul, K., Jaimchariyatam, N., Pruksananonda, C., & Chonchaiya, W. (2016). Increased Sleep Disturbances in Thai Children With Attention-Deficit Hyperactivity Disorder Compared With Typically Developing Children. *Behavioral Sleep Medicine*, *14*(6), 677–686. https://doi.org/10.1080/15402002.2015.1065409

Classi, P., Milton, D., Ward, S., Sarsour, K., & Johnston, J. (2012). Social and emotional difficulties in children with ADHD and the impact on school attendance and healthcare utilization. *Child and Adolescent Psychiatry and Mental Health*, *6*(1), 33. https://doi.org/10.1186/1753-2000-6-33

Clayton, D., Green, J. L., Rinehart, N., & Sciberras, E. (2020). Association Between Teacher-Reported Symptoms of Autism Spectrum Disorder and Child Functioning in Children With ADHD. *Journal of Attention Disorders*, *24*(12), 1727–1734. https://doi.org/10.1177/1087054716669227

Climie, E. A., & Mitchell, K. (2017). Parent-child relationship and behavior problems in children with ADHD. *International Journal of Developmental Disabilities*, *63*(1), 27–35. https://doi.org/10.1080/20473869.2015.1112498

El-Sayed, S. (2019). Attention Deficit Hyperactivity Disorder and its Relationship to Sleep and Conduct Disorders among School Age Children. *Port Said Scientific Journal of Nursing*, *6*(1), 21–38. https://doi.org/10.21608/pssjn.2019.33451

Faraone, S. V. (2018). The pharmacology of amphetamine and methylphenidate: Relevance to the neurobiology of attention-deficit/hyperactivity disorder and other psychiatric comorbidities. *Neuroscience & Biobehavioral Reviews*, *87*, 255–270. https://doi.org/10.1016/j.neubiorev.2018.02.001

Faraone, S. V., & Larsson, H. (2019). Genetics of attention deficit hyperactivity disorder. *Molecular Psychiatry*, *24*(4), 562–575. https://doi.org/10.1038/s41380-018-0070-0

Fleming, M., Fitton, C. A., Steiner, M. F. C., McLay, J. S., Clark, D., King, A., Mackay, D. F., & Pell, J. P. (2017). Educational and Health Outcomes of Children Treated for Attention-

Deficit/Hyperactivity Disorder. *JAMA Pediatrics*, *171*(7), e170691. https://doi.org/10.1001/jamapediatrics.2017.0691

Flouri, E., Midouhas, E., Ruddy, A., & Moulton, V. (2017). The role of socio-economic disadvantage in the development of comorbid emotional and conduct problems in children with ADHD. *European Child & Adolescent Psychiatry*, *26*(6), 723–732. https://doi.org/10.1007/s00787-017-0940-z

Frank, Y. (2024). Attention Deficit Hyperactivity Disorder. In *Pediatric Behavioral Neurology* (pp. 179–202). CRC Press. https://doi.org/10.1201/9781003574088-7

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A Research Note. *Journal of Child Psychology and Psychiatry*, *38*(5), 581–586. https://doi.org/10.1111/j.1469-7610.1997.tb01545.x

Hong, S.-B., Im, M.-H., Kim, J.-W., Park, E.-J., Shin, M.-S., Kim, B.-N., Yoo, H.-J., Cho, I.-H., Bhang, S.-Y., Hong, Y.-C., & Cho, S.-C. (2015). Environmental Lead Exposure and Attention Deficit/Hyperactivity Disorder Symptom Domains in a Community Sample of South Korean School-Age Children. *Environmental Health Perspectives*, *123*(3), 271–276. https://doi.org/10.1289/ehp.1307420

Khodabakhshi Koolaee, A., Shahi, A., Navidian, A., & Mosalanejad, L. (2015). The effect of positive parenting program training in mothers of children with attention deficit hyperactivity on reducing children's externalizing behavior problems. *Journal of Fundamentals of Mental Health*, *17*(3).

Knell, S. M. (2015). Cognitive-Behavioral Play Therapy. In *Handbook of Play Therapy* (pp. 119–133). Wiley. https://doi.org/10.1002/9781119140467.ch6

Lycett, K., Sciberras, E., Mensah, F. K., & Hiscock, H. (2015). Behavioral sleep problems and internalizing and externalizing comorbidities in children with attention-deficit/hyperactivity disorder. *European Child & Adolescent Psychiatry*, *24*(1), 31–40. https://doi.org/10.1007/s00787-014-0530-2

Ogundele, M. O. (2018). Behavioural and emotional disorders in childhood: A brief overview for paediatricians. *World Journal of Clinical Pediatrics*, *7*(1), 9–26. https://doi.org/10.5409/wjcp.v7.i1.9

Safavi, P., Saberzadeh, M., & Tehrani, A. M. (2019). Factors Associated with Treatment Adherence in Children with Attention Deficit Hyperactivity Disorder. *Indian Journal of Psychological Medicine*, *41*(3), 252–257. https://doi.org/10.4103/IJPSYM.IJPSYM_456_18

Wannapaschaiyong, P., Penphattarakul, A., Rojmahamongkol, P., & Sutchritpongsa, S. (2024). Sleep Habits and Behavioral Problems in Preschool-aged Children with ADHD. *Siriraj Medical Journal*, *76*(3), 116–124. https://doi.org/10.33192/smj.v76i3.267462

Wolraich, M. L., Chan, E., Froehlich, T., Lynch, R. L., Bax, A., Redwine, S. T., Ihyembe, D., & Hagan, J. F. (2019). ADHD Diagnosis and Treatment Guidelines: A Historical Perspective. *Pediatrics*, *144*(4). https://doi.org/10.1542/peds.2019-1682