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Parental Stress Levels Among Parents of Children with ADHD: A Cross-Sectional Study in Iraq

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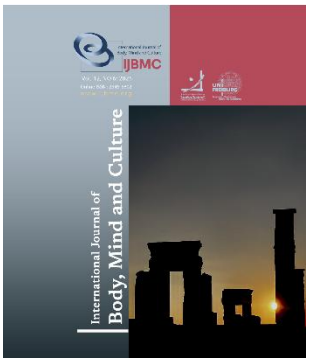

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ABSTRACT

Objective: This study aimed to assess the levels of stress experienced by parents of children diagnosed with Attention-Deficit/Hyperactivity Disorder (ADHD) in Najaf Governorate, Iraq, and explore associations with socio-demographic characteristics.

Methods and Materials: A descriptive correlational cross-sectional study was conducted from December 2023 to January 2024 in Najaf. A total of 96 parents of children with clinically diagnosed ADHD were recruited from psychiatric clinics and neurodevelopmental centers using purposive sampling. Data were collected using a structured questionnaire consisting of socio-demographic variables and the Arabic version of the Parenting Stress Index-Short Form (PSI-SF), covering three dimensions: Parental Distress (PD), Parent-Child Dysfunctional Interaction (PCDI), and Difficult Child (DC). Data were analyzed using SPSS v27, employing descriptive statistics and inferential tests such as ANOVA and Pearson correlation.

Findings: The mean age of participating parents was 34.5 years. Most were mothers (78.1%), married (88.5%), and unemployed (64.6%). The majority of children were boys (61.5%), of school age (60.4%). Parental stress scores across all dimensions (PD, PCDI, and DC) fell within the "typical stress" range. The total mean score was 126.56 (SD = 18.72), corresponding to 70.31% of the maximum possible score. No significant indications of clinically high stress levels were identified.

Conclusion: While parents of children with ADHD experience notable caregiving challenges, the overall stress levels in this sample remained within normal limits. These findings highlight the importance of individualized support strategies based on family context rather than assuming universally high stress.

Keywords: ADHD, Parental Stress, Parenting, Child mental Health.

Introduction

Parents of children diagnosed with neurodevelopmental disorders, including Attention-deficit/hyperactivity disorder (ADHD), which is characterized as a neurodevelopmental condition commencing in childhood, are predisposed to experiencing heightened levels of parental stress (Lindström et al., 2024).(Alghamdi et al., 2023)

Children with attention deficit hyperactivity disorder experience for any parent many negative impacts not only on their emotional needs satisfaction, but also on their quality of life (Abd elbaseer Mahmoud et al., 2024). Parenting children with ADHD is associated with parental mental health problems (Ko & Jeong, 2024).

Parental stress is a significant and major concern for families, contending with the challenges associated with ADHD (Alsubaie et al., 2024). The continuous care required for children with ADHD imposes a substantial burden on parents, necessitating the persistent management of the emotionally and physically demanding aspects of their children's complex

behavioral challenges. Parents are confronted with the formidable tasks of addressing educational challenges and maintaining a well-ordered household environment (Ashfaq, 2018; Kalmbach et al., 2018; Leithauser et al., 1990).

Parental stress arises from the challenges and emotional strain experienced by parents in meeting the demands of parenting. Parental mental health refers to how parents process thoughts, regulate emotions, and behave, reflecting the psychological or biological mechanisms that sustain their mental well-being (McQuillan et al., 2019). Parents with children diagnosed with ADHD experience elevated levels of parental stress and mental health challenges compared to parents of typically developing children (Samiei et al., 2015).

Parents of children diagnosed with ADHD frequently engage in maladaptive parenting methodologies; they tend to exhibit heightened disapproval, critical attitudes, and demonstrate diminished oversight alongside an increased reliance on corporal punishment in comparison to guardians of offspring devoid of ADHD who endeavor to manage disruptive behaviors. Such parenting methodologies possess the potential to influence the trajectory of the disorder, exacerbate its clinical manifestations, and precipitate the secondary emergence of psychiatric and maladaptive behaviors (Tarazhi, 2024).

Parenting techniques, the relationship between parents and children, and the psychological functioning of parents can all be negatively impacted by high levels of parenting stress (Martin et al., 2019). According to research by Pimentel MJ et al., high parental stress levels are linked to problems in parenting techniques, the interaction between parents and children, and the psychological functioning of parents (Pimentel et al., 2011).

Attachment styles, maternal responsiveness, parental engagement, parenting methodologies, parental stress levels, familial discord, and parents' psychological well-being represent several dimensions of family dynamics (El-Sheikh & Kelly, 2017). This study aims to measure stress levels among parents of children with ADHD in Najaf Governorate, Iraq.

Methods and Materials

Study Design and Participants

Design of the Study:

A cross-sectional, descriptive correlational design was employed to elucidate the subject matter of the study.

Settings of the Study

The research was carried out in Najaf Governorate, specifically targeting parents of children diagnosed with attention deficit hyperactivity disorder (ADHD) who are seeking assistance from psychiatric clinics or specialised centres dedicated to the care of children with such disorders. The participants were recruited from institutions linked to the Al-Najaf Health Department, which include the following entities: Al-Hakim Psychiatric Hospital, Al Saada Autism Centre, Autism Care Centres: public centres specialising in the diagnosis and management of autism spectrum disorders and neurodevelopmental disorders, such as Al Noor Academy, Hamayim Alsalam Centre, Aliartiqa Centre, Altahadiy Centre, as well as Psychiatric Outpatient Clinics in Najaf Al-Ashraf.

Sample and sampling of the Study

A purposive sampling approach, a type of non-probability sampling, was employed to recruit a cohort of 96 parents of children diagnosed with ADHD. The requisite sample size for this study was calculated utilizing a population proportion of 50%, an error margin of 5%, and a confidence level of 95%, with an associated Z-value of 1.96.

Inclusion criteria

1. Children aged 3 to 12, male and female, with a clinical diagnosis of ADHD.
2. The clinical diagnosis could be made based on reports from parents or clinicians.
3. The child could have been clinically diagnosed before the study using interviews or scoring above the clinical cut-off on an ADHD rating scale, confirmed by a clinician.

Exclusion criteria

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1. Exclusion of children under three years of age: Participants, regardless of gender, who were under three or over 12 years were excluded from study.

2. Exclusion of cases diagnosed exclusively with autism spectrum disorder (ASD): Cases identified solely with autism spectrum disorder, without a verified and official diagnosis of attention deficit hyperactivity disorder (ADHD), were excluded.

Data Collection and Study Instrument:

The study involved 96 parents who were recruited during routine visits to the Neurodevelopmental Disorders Center in Najaf. Between December 2023 and January 2024, before distributing the questionnaire, the researcher explained the purpose of the study. When verbal consent was obtained, the questionnaires were distributed to all participating parents.

Part I: Socio-Demographic Data

Included the parents' age, education level, average monthly household income, employment status, marital status, number of children, as well as the age and gender of the child selected to answer the survey.

Part II: Arabic Parenting Stress Index-Short Form (PSI-SF):

The Parenting Stress Index-Short Form (PSI-SF) Abidin, R.A.1983 is a psychometric tool designed to assess levels of stress experienced by parents in their role as caregivers. It is a standardized self-report questionnaire that has been translated into multiple languages, including Arabic, ensuring cultural adaptability and relevance. This tool is especially valuable for research and clinical practice involving parents of children with developmental or behavioral challenges, such as attention deficit hyperactivity disorder (Reitman et al., 2002).

Data Analysis:

The Statistical Package for the Social Sciences (SPSS), IBM Version 27, was employed for data coding and analysis. Descriptive statistics, including measures of central tendency, variability, frequency counts, and percentages, were utilized. Additionally, appropriate inferential statistical methods suitable for data distribution were applied. The Kolmogorov-Smirnov (K-S) test was further employed to ascertain whether the data followed a normal or non-normal distribution. To explore the relationship between parental stress and sociodemographic variables under normal distribution conditions, one-way ANOVA, the Pearson correlation coefficient, and the independent sample t-test were utilized.

Findings and Results

The results showed (Table 1) that most parents (51%) were between 33 and 40 years old, with an average age of 34.50 years. Most (88.5%) were urban residents, while 64.6% were unemployed and had an income of less than 600,000 Iraqi dinars. In terms of education, 46.9% had completed a diploma or bachelor's degree, and the vast majority (88.5%) were married with two to three children (57.3%). For children diagnosed with ADHD, most (40.6%) were the first child, the majority (60.4%) were of school age, with an average age of 6.59 years. Most (61.5%) were male, and 58.3% suffered from organic, psychological, or neurological diseases.

Table 1

Distribution of the Participants According to their socio-demographic data Characteristics (N=96)

Demographic Characteristics	Subgroup	f.	%
Sample	Father	21	21.9
	Mother	75	78.1
Age group	24 – 32 years	35	36.5
Mean ± SD= 34.50 ± 5.113	33 - 40 years	49	51.0
Min- Max= 24 - 48 years	41 - 48 years	12	12.5
Residence	City	85	88.5
	Rural	11	11.5
Occupation	Earner/ Housewife	62	64.6
	Employer	34	35.4
Income	Less than 300000 IQD	29	30.2
	300000 - 600000 IQD	29	30.2
	601000 - 900000 IQD	24	25.0

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	More than 900000 IQD	14	14.6
Educational level	Read and write	12	12.5
	Primary school	22	22.9
	Intermediate or secondary school	17	17.7
	Diploma or Bachelors	45	46.9
Marital status	Married	85	88.5
	Divorce	5	5.2
	Separate	2	2.1
	Widow	4	4.2
	Total	96	100.0
Number of children in the family	One child	12	12.5
Mean ± SD= 2.90 ± 1.218	2 – 3 Children	55	57.3
Min- Max= 1 - 6 Children	More than 3 children	29	30.2
Child's order in the family	First	39	40.6
	Second	28	29.2
	Third	15	15.6
	Fourth	13	13.5
	Fifth	0	0
	Sixth	1	1.0
Child age	Preschool	38	39.6
Mean ± SD= 6.59 ± 2.514	School age	58	60.4
Min- Max= 3 - 12 years			
Child sex	Boy	59	61.5
	Girl	37	38.5
Does the child suffer from any organic, psychological or neurological diseases?	Yes	56	58.3
	No	40	41.7
Total		96	100.0

f= frequencies, %=Percentages, M = Mean of score, S.D = Standard Deviation, Min= minimum and Max= maximum

The results in Table 2 showed that the total scores percentiles of the parental stress levels associated with sleep problems were typical Stress and its dimensions were also typical Stress.

Table 2

Total Scores Percentiles of The Parental Stress Levels and Its Dimensions:

Parental Stress total and Dimensions	Range		Range in sample		Mean	SD	%
	Min	Max	Min	Max			
Parental Distress (PD)	12	60	19	60	43.48	8.358	74.46
Parent-Child Dysfunctional Interactions (PCDI)	12	60	24	59	41.62	6.786	69.36
Difficulty Child (DC)	12	60	24	54	41.46	6.937	69.10
Total Parenting Stress	36	180	79	171	126.56	18.721	70.31

Percentiles for PD, DC, and Total stress= Typical Stress (15 – 80), High Stress (81 - 89), and Clinically Significant (90 - 100). Assessment Percentiles for PCDI= Typical Stress (15 – 80), High Stress (81 - 84), and Clinically Significant (85 - 100).

The correlation results revealed that health anxiety was positively correlated with chronic fatigue ($r = .51$, $p < .001$) and negatively correlated with spiritual vitality ($r = -.42$, $p < .001$), social support ($r = -.38$, $p < .001$), and lifestyle ($r = -.46$, $p < .001$). All correlations were significant at the .01 level, suggesting strong linear relationships among the variables (Table 2).

Discussion and Conclusion

The results showed that most parents (51%) were between 33 and 40 years old, with a mean age of 34.50 years, consistent with a study by Sung et al. (2008) that included 228 parents with a mean age of 43.3 years (Sung et al., 2008). Gao et al. (2023) also found that age at childbirth was associated with the risk of attention deficit hyperactivity disorder (ADHD), with mothers aged 18–24 years being 1.48 times more likely to have children with ADHD compared to mothers aged 25–29 years (Gao et al., 2023). Chang et al. (2014) also showed that children born to fathers under 21 years old were twice as likely to develop ADHD compared to those born between 26 and 30 years old (Chang et al., 2014).

In terms of place of residence, the majority of participants (88.5%) were urban residents, which is

consistent with a study by Liu et al. (2018), which found that the rate of ADHD diagnosis is higher in urban areas (Liu et al., 2018). A study by Russell et al. (2016) confirmed that increased awareness and easy access to health services in cities lead to higher diagnosis rates (Russell et al., 2016).

Regarding economic status, most participants (64.6%) were unemployed and had an income of less than 600,000 Iraqi dinars. Multiple studies have found that children from low-income families are more likely to develop ADHD due to family stressors and lack of healthcare) Froehlich et al., 2007; Russell et al., 2016; Sayal et al., 2018.(A study by Biederman et al. also showed that mothers with children with ADHD were less likely to work full-time due to intensive care requirements (Biederman et al., 2012).

Regarding educational level, 46.9% of participants had a diploma or bachelor's degree, which is consistent with the findings of Sayal et al., where 50% of parents of children with ADHD had a diploma (Sayal et al., 2018). Other studies have shown that 40% of parents have a bachelor's degree (Hughes et al., 2024; Torvik et al., 2020).

The vast majority (88.5%) were married, and most (57.3%) had two to three children, consistent with studies (Chu et al., 2012; Eakin et al., 2004; Malkoff et al., 2020), which confirmed that most parents of children with ADHD were married and had more than one child.

About children with ADHD, 40.6% were the first child in the family, while the largest percentage (60.4%) were of school age, with a mean age of 6.59 years, and the majority (61.5%) were male. These findings are consistent with numerous studies, as Brown et al., in 2012, found that ADHD is most often diagnosed at school age (Brown et al., 2012), while Salari et al., in 2023, confirmed that males are three times more likely to be diagnosed with ADHD than females (Salari et al., 2023). Research also indicates that ADHD is more common among boys by a ratio of 2:1 due to their more overt behaviors in the school environment (Ramtekkar et al., 2010; Willcutt, 2012).

The results in Table 2 showed that parental stress levels, in all their dimensions, were within the normal range. A study in JAMA Pediatrics indicates that up to 50% of parents of children with ADHD face challenges that affect their daily stress levels (Koopman-Verhoeff et al., 2019). A study by Martin et al. also confirmed that developmental disorders may directly impact parental stress and parents' psychological well-being, according to a study published in Frontiers in Child and Adolescent Psychiatry (Martin et al., 2019).

Furthermore, these findings support a study in the Journal of Clinical Sleep Medicine, which indicated that the daily challenges of caring for children with ADHD increase parental stress and impact their psychological well-being (French et al., 2023). A study by Scheibner et al. in 2024 also found that the severity of parental stress depends on the nature of the stressors they face. Parents of children with developmental disorders experienced higher levels of stress, and stress was one of the best predictors of their quality of life (Scheibner et al., 2024).

Strengths and Limitations

1. Challenges in diagnosing ADHD are attributable to its symptomatic overlap with autism spectrum disorders, as reported by the professionals at the center. Furthermore, three centers reported an absence of relevant cases, and two centers declined participation.

2. A fee by institutions for access to facilities or participants hinders data collection.

3. Parents' reluctance to complete questionnaires due to stigma concerns

The results show that the sample's parenting stress levels fall within the normal to moderately high-stress range, providing valuable indicators for identifying areas that may require additional intervention or support to improve parental well-being. These findings suggest that caring for children with ADHD can be challenging for parents. However, it does not necessarily lead to severe stress levels, reflecting the variability of effects depending on family circumstances.

Recommendation

1. Conduct more in-depth studies on the relationship between parental stress, socioeconomic factors, and sleep problems in children with ADHD.
2. Establish community-based support groups where parents can share experiences, coping strategies, and receive guidance from professionals.
3. Promote marital counseling and family therapy programs to strengthen family relationships and reduce parental stress.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Ethical considerations in this study were that participation was entirely optional. Before data collection, Institutional and ethical approval from the ethical boards of the selected educational institutions, alongside ethical clearance from the Clinical Research Ethics Committee of the University of Baghdad/College of Nursing, was obtained (ethics committee permission number: No. 55 / 13/11/2024), in accordance with the 1964 Helsinki Declaration and its subsequent amendments or comparable ethical standards. It was underscored to the participating educators that their participation in the study was entirely voluntary, and they provided written informed consent. Furthermore, they were assured that their responses would be handled with strict confidentiality.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contribute to this study.

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