

Knowledge and Attitude of Attention-deficit Hyperactivity Disorder among Parents Attending Primary Health-care Centers in Al-Karkh/Baghdad City, 2023

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Abstract

Background: Attention-deficit hyperactivity disorder (ADHD) is a common neurodevelopmental disorder in children. Knowledge and attitude of parents about the disorder influence the diagnosis, treatment, and future of the child as an individual and as a part of the community. **Objectives:** The objective of this study was to assess the knowledge and attitude of parents about ADHD in Alkarkh, Baghdad, Iraq, 2023. **Methods:** A cross-sectional study was conducted between February and July 2023, at 12 primary health centers in Al-Karkh Health Directorate in Baghdad City, and a convenient sample of 300 parents was involved. Data were collected using a direct interviewing questionnaire. **Results:** According to age, 196 (65.3%) of the sample fell in the age group of 31–40 years, the mothers-to-fathers ratio was 5:1, 76.3% of participants had higher education, 206 (68.7%) were employed, 134 (44.7%) participants had fair knowledge, and only 8 (2.7%) had good knowledge. More than two-thirds of parents, 214 (71.5%), had good knowledge about the treatment of ADHD, and 164 (54.8%) had symptoms of the disorder, while they had less knowledge about the nature of ADHD and its risk factors. There was a statistically significant association ($P < 0.05$) between knowledge level and parent's education, occupation, and residency. About 252 (84%) parents had positive attitude toward ADHD. The positive attitude was significantly associated with the age, education, occupation, and residency of the participants. **Conclusions:** Less than half of the study samples had fair knowledge, and the majority had a good attitude regarding ADHD.

Keywords: Attention-deficit hyperactivity disorder, attitude, Baghdad City, parents' knowledge

INTRODUCTION

Attention-deficit hyperactivity disorder (ADHD) is one of the most common childhood behavioral disorders; it affects 3%–5% of children;^[1] it is a chronic disorder that can cause impairment into adolescence and adulthood, and it is characterized by persistent inattention, hyperactivity, and impulsivity inconsistent with the patient's developmental stage.^[2,3] There are three subcategories of ADHD: predominantly inattentive type, predominantly hyperactive/impulsive type, and combined type.^[1]

In some children, ADHD may occur with other disorders such as behavior or conduct problems, learning disorders, anxiety, and depression.^[4]

Naturally, children's behaviors vary, but if a child goes beyond what is considered average behavior, he or she may be unsuccessful in his or her future academic and social life.

All these challenges place a strain on both parents at home and caregivers at day care or kindergarten. This might cause issues with learning and relationships with peers. Some of these behaviors are inappropriate and may result in punishment, making the child feel rejected.^[5] A child with ADHD has difficulties in focusing and acting in accordance with their age and development, as opposed to a normal child who may have difficulty focusing or behaving but not in a continuous pattern.^[6,7] The Diagnostic and Statistical Manual of Mental

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Disorders, Fifth Edition (DSM-5) defines ADHD as a list of nine hyperactive-impulsive and nine inattentive symptoms, of which children must manifest six or more in one or two of the symptoms domains, to the point where they significantly impair functioning in two or more contexts.^[2] Diagnostic assessments of ADHD, according to DSM-5, cannot be “done accurately without consulting informants who have seen the individual” in a variety of “settings;” several informants are “beneficial,” although, in clinical practice, the ADHD diagnosis is sometimes made with a single informant report. Parent’s reports are typically readily available, and at times used in the absence of a teacher report, when formulating the diagnosis.^[8]

Early detection and intervention improve the likelihood of success in lowering both the core symptoms of ADHD as well as its medium and long-term implications. Parents begin to be more aware of their children while also displaying a more understanding, nondepreciating attitude.^[3]

According to a study done in Baghdad by Alobaidi and Ali the prevalence was 10.5% of school-age children.^[9] In another study done in Al-Hilla City by Aljothery and Baiee, the prevalence among schoolchildren was 14%^[10] and 8.67% in a study done in Tikrit City by Al-Ani *et al.*, while it was as high as 25% in Al-Najaf City.^[11,12] The prevalence of ADHD in the Arab world was between 1.3% and 16% according to a systematic review done by Al Hraiwil *et al.* in 2015.^[13]

To evaluate the level of knowledge and attitude of parents toward ADHD in Iraq, we conducted this study in primary health-care centers in Al-Karkh district of Baghdad/Iraq.

METHODS

A descriptive cross-sectional study was conducted during a period from February 15, 2023 to July 15, 2023, at 12 primary health centers (PHCs) selected from six sectors from six sectors of Al-Karkh Health Directorate in Baghdad city, Convenience sampling involved 300 parents PHCs visitors.

Data collection was through direct interview, and using a structured questionnaire which involved three parts.

- First: Included the sociodemographic characteristics of the participants (age, father or mother, education, occupation, residency, and number of children); additional questions were added regarding contact with a child who they thought to have ADHD and the degree of kinship to that child
- Second: Questions about the definition of the disorder, symptoms, risk factors, and treatment
- Third: This section included questions about attitude; the five-point Likert scale was used for responses (strongly disagree, disagree, neutral, agree, and strongly agree).

Questionnaire validity

The questionnaire was reviewed and validated by two specialists, the first specialized in community medicine, and the second was a psychiatrist; both gave notes and suggestions

which were taken into consideration while writing the questionnaire in its final form.

Inclusion criteria

Parents of children aged 4–18 years, visiting the primary health centers.

Exclusion criteria

- Parents having children <4 years
- Those who refuse to participate in the study.

Ethical consideration

Verbal consent from all participants was obtained after explaining the aim of the study and assuring them about the confidentiality of the collected data and the use of them for research purposes only.

Scoring

In the knowledge section, each correct answer was given 1 score, and each wrong answer was given a 0 score; the total knowledge score ranged from 0 to 32, poor knowledge was defined as ≤ 16 , fair knowledge was defined as 17–24, while good knowledge scored above or equal to 25, while in the attitude section, the 5-point Likert scale was used.

Attitude average cumulative responses are interpreted by defining intervals of a 5-point Likert scale as shown in the following table below:

Likert scale description	Likert scale	Likert scale interval
Strongly disagree	1	1–1.80
Disagree	2	1.80–2.60
Neutral	3	2.60–3.40
Agree	4	3.40–4.20
Strongly agree	5	4.20–5.00

A positive attitude level is defined by a score of ≥ 3.2 , and a negative attitude is defined by a score of < 3.2 . For the total level of attitude, it was considered a positive attitude if the score was $\geq 50\%$ and a negative attitude was considered for a score of $< 50\%$.

The data collected were arranged into a Microsoft Office Excel sheet and loaded to the Statistical Package for the Social Sciences (SPSS) version 26 (SPSS Inc., Chicago, IL, USA) for statistical analysis. For description statistics, tables and figures were used. A Chi-square test was applied to find out the significance of the association between related categorical variables. $P \leq 0.05$ was considered a discrimination point of significance.

RESULTS

The majority of participants (65.3%), fell into the age group of 31–40 years. Mothers were the dominant by forming 84%, higher education was 76.3, and employed was 68.7. The highest proportion of the participants was from the central part, 86.3%. Parents who have one or two children consisted of 60%, as shown in Table 1.

Table 1: Sociodemographic characteristics of the study sample ($n=300$) in Baghdad 2023

Item	n (%)
Age	
<30	46 (15.3)
31–40	196 (65.3)
41–50	32 (10.7)
51 or more	26 (8.7)
Parents	
Father	48 (16.0)
Mother	252 (84.0)
Education	
Illiterate	11 (3.7)
Literate	21 (7.0)
Secondary	39 (13.0)
College or higher	229 (76.3)
Occupation	
Employed	206 (68.7)
Unemployed	18 (6.0)
Homemaker	76 (25.3)
Residency	
Urban	259 (86.3)
Rural	41 (13.7)
Number of children	
1–2	180 (60.0)
3–5	100 (33.3)
6 and more	20 (6.7)

As shown in Table 2, the participants who think that it is a childhood disorder was 110 (36.7%), while 131 (43.7%) agreed that the disorder occurs more in boys, and 152 (50.7%) of the participants said they do not know if the disease improves with age and disappears by adulthood. About 145 (48.3%) claimed that a child with ADHD has a higher IQ than normal children. More than half of the samples, 164 (54.7%), knew that ADHD is associated with other disorders like depression; the majority of the responders, 204 (68%), knew that the disease is diagnosed when symptoms occur in more than two places, and it has patterns of symptoms including hyperactivity and inattention and impulsivity 219 (73%), and 219 (73%) knew that affected children cannot sustain attention when spoken to. Regarding the negative effect of ADHD on school achievements, 144 (48%) thought it causes poor school performance. The majority, 228 (76%), of the sample agreed that a child with ADHD fidgets and gets frustrated easily, while 138 (46%) thought that the disorder increases violence toward others, 110 (36.7%) agreed that they suffer from daydreaming and wandering, and 92 (30.7%) agreed that ADHD child is more forgetful than his peers table. While 143 (47.7%) know that maternal exposure to environmental pollutants and some drugs increase the risk of her child developing ADHD and that the same applies to smoking during pregnancy, 126 (42%). Nearly half of the study samples, 137 (45.7%), answered that early childhood insult to the brain increases the risk of the disorder; only 55 (18.3%) and 118 (39.3%) were correct that prematurity and child's exposure to pollutants like lead also

increases risk. The lowest proportion of correct answers was to the two statement "Spending long time watching TV or tablet increase the risk of a child developing ADHD."

There was a statistically significant association ($P < 0.05$) between the total knowledge level and the parent's education, occupation, and residency, while there was no association ($P > 0.05$) between the knowledge level and the parent's age, whether the parent was the mother or father and the number of children as shown in Table 3.

The overall knowledge level of the participants was as follows:

About half of the study samples, 158 (52.7%), had a poor knowledge score (<50), while 134 (44.7%) had a fair knowledge score of 50%–75%, and only 8 (2.7%) scored a high level of knowledge (>75).

As shown in Table 4, responses revealed that 182 (60.7%) agreed with the statement "decreasing the amount of sugars and preservatives in a child's diet decreases symptoms of ADHD," while 154 (72%) accepted the statement "decreasing the time spent watching TV and other devices will decrease the symptoms of ADHD." Regarding the community view on children with ADHD, 173 (57.6%) agreed that having ADHD is considered a stigma, concerning the statement, "Do you think that positive reinforcement (rewarding good behavior) decreases the symptoms of ADHD in affected children?" more than half of the study sample, 206 (68.7%), thought this was a true statement; finally, about 192 (64%) of parents believed that harsh punishment increases the symptoms of ADHD.

The attitude score was significantly associated with age, education, occupation, and residency of the participants ($P < 0.05$): as the proportion of good attitude was significantly higher in the age group (31–40 years) 176 (89.8%), ($P = 0.001$), while 211 (92.1%) was in the college or higher group ($P < 0.05$), and 187 (90.8%) were employed ($P = 0.001$). Regarding the residency, participant from urban were scored higher, 229 (88.4%) ($P = 0.001$), as shown in Table 5.

The overall attitude score was 252 (84%), showed a positive attitude, and 48 (16%) showed a negative attitude.

DISCUSSION

Less than half of the study samples, 44.5%, had fair knowledge, while about half 52.7% had poor knowledge, and only 2.7% had good knowledge. In a study done in Iran by Ghanizadeh, in 2007, the parents' overall knowledge was 66%,^[14] while in comparison with results from a study, in 2022, by Fan *et al.* done in China, the participants were parents of ADHD children, and the overall knowledge was 68.6%.^[15]

The highest rate of correct answers, 71.5%, was to knowledge about treatment; this may be due to fewer questions about treatment in comparison with other question categories, followed by the answers to questions about symptoms of disease in which 50.9% were correct; these results were lower than knowledge in Dodangi's study where the correct answers

Table 2: Distribution of the sample answers regarding general knowledge, symptoms, and risk factors of attention-deficit hyperactivity disorder

Knowledge questions	Yes, <i>n</i> (%)	No, <i>n</i> (%)	I don't know, <i>n</i> (%)
ADHD occurs in children only	110 (36.7)	85* (28.3)	105 (35)
ADHD occurs more in boys more than girls	131* (43.7)	36 (12)	133 (44.3)
ADHD improves with increasing age and disappears with adulthood	95 (31.7)	53* (17.7)	152 (50.7)
ADHD children have high IQ	145 (48.3)	51* (17)	104 (34.7)
ADHD is associated with other disorders like depression and anxiety disorders	164* (54.7)	25 (8.3)	111 (37)
Symptoms should occur in two or more occasions such as at home and school	204* (68)	8 (2.7)	88 (29.3)
Symptoms of ADHD include patterns of inattention, hyperactivity, and impulsivity	219* (73)	8 (2.7)	73 (24.3)
A child with ADHD cannot sustain attention when spoken to	219* (73)	17 (5.7)	64 (21.3)
A child with ADHD has poor school performance	144* (48)	58 (19.3)	98 (32.7)
A child with ADHD fidgets and gets frustrated easily	228* (76)	4 (1.3)	68 (22.7)
A child with ADHD can be violent with others	138* (46)	55 (16.3)	107 (35.7)
A child with ADHD suffers from daydreaming and wandering	110* (36.7)	27 (9)	163 (54.3)
Do you think a child with ADHD is more forgetful than his peers?	92* (30.7)	50 (16.7)	158 (52.7)
Maternal exposure to environmental pollutants and some drugs increases the risk of her child developing ADHD	143* (47.7)	29 (9.7)	128 (42.7)
Maternal smoking during pregnancy increases the risk of developing ADHD in her child	126* (42)	26 (8.7)	148 (49.3)
Early childhood insult to the brain increases the risk of ADHD	137* (45.7)	36 (12)	127 (42.3)
A child who was preterm has a higher risk of developing ADHD	55* (18.3)	61 (20.3)	184 (61.3)
Early childhood exposure to pollutants like lead increases the risk of ADHD	118* (39.3)	18 (6)	164 (54.7)
Spending a long time watching TV or tablet increases the risk of a child developing ADHD	205 (68.3)	23* (7.7)	72 (24)

*The correct answer. ADHD: Attention-deficit hyperactivity disorder, IQ: Intelligent quotient

Table 3: Association between sociodemographic characteristics and knowledge level (*n*=300) in Baghdad 2023

Variables	Total knowledge			Total	<i>P</i>
	Poor knowledge scoring (≤ 16), <i>n</i> (%)	Fair knowledge scoring (17–24), <i>n</i> (%)	Good knowledge scoring (25), <i>n</i> (%)		
Age					
<30	24 (52.2)	22 (47.8)	0	46 (15.3)	0.393
31–40	100 (51)	93 (47.4)	3 (1.5)	196 (65.3)	
41–50	22 (68.8)	9 (28.1)	1 (3.2)	32 (10.7)	
51 or more	15 (57.7)	10 (38.5)	1 (3.8)	26 (8.7)	
Parent					
Father	28 (58.3)	19 (39.6)	1 (2.1)	48 (16.0)	0.733
Mother	133 (52.8)	115 (45.6)	4 (1.6)	252 (84.0)	
Education					
Illiterate	9 (81.8)	2 (18.2)	0	11 (3.7)	<0.001*
Literate	19 (90.5)	2 (9.5)	0	21 (7)	
Secondary	26 (66.7)	11 (28.2)	2 (5.1)	39 (13)	
Collage or Higher	107 (46.7)	119 (50)	3 (1.3)	229 (76.3)	
Occupation					
Employed	96 (46.6)	106 (51.1)	4 (1.9)	206 (68.7)	0.009*
Unemployed	12 (66.7)	6 (33.3)	0	1 (6)	
Homemaker	53 (69.7)	22 (28.9)	1 (1.3)	76 (25.3)	
Residency					
Urban	129 (49.8)	125 (48.3)	5 (1.9)	259 (86.3)	0.003*
Rural	32 (78.0)	9 (22.0)	0	41 (13.7)	
Number of children					
1–2	87 (48.3)	90 (50)	3 (1.7)	180 (60.0)	0.098
3–5	64 (64)	35 (35)	1 (1)	100 (33.3)	
6 and more	10 (45)	9 (50.0)	1 (5)	20 (6.7)	

*Highly significant. Chi-square test

Table 4: Distribution of the studied sample according to their answers to attitude questions

	Strongly disagree, <i>n</i> (%)	Disagree, <i>n</i> (%)	Neutral, <i>n</i> (%)	Agree, <i>n</i> (%)	Strongly agree, <i>n</i> (%)
Do you think that decreasing the amount of sugars and preservatives in a child's diet decreases symptoms of ADHD?	7 (2.3)	14 (4.7)	97 (32.3)	123 (4)	59 (19.7)
Do you think that decreasing the time spent by a child watching TV and tablets decreases the symptoms of ADHD?	2 (0.7)	16 (5.3)	64 (21)	122 (40)	96 (32)
Do you think that diagnosing a child with ADHD affects how the community views him/her?	15 (5)	37 (12.3)	75 (25)	127 (42.3)	46 (15.3)
Do you think that positive reinforcement (rewarding good behavior) decreases the symptoms of ADHD in affected children?	4 (1.3)	19 (6.3)	71 (23.7)	144 (48)	62 (20.7)
Do you think that harsh punishment increases symptoms of ADHD?	10 (3.3)	27 (9)	71 (23.7)	124 (41.3)	68 (22.7)

ADHD: Attention-deficit hyperactivity disorder

Table 5: Association between sociodemographic characteristics and attitude (*n*=300) in Baghdad 2023

Variables	Level of attitude		<i>P</i>
	Positive scoring (≥50), <i>n</i> (%)	Negative scoring (<50), <i>n</i> (%)	
Age			
<30	36 (78.3)	10 (21.7)	0.001
31–40	176 (89.8)	20 (10.2)	
41–50	21 (65.6)	11 (34.4)	
51 and more	19 (73.1)	7 (26.9)	
Parent			
Father	36 (75.0)	12 (25.0)	0.063
Mother	216 (85.7)	36 (14.3)	
Education			
Illiterate	6 (54.5)	5 (45.5)	0.001
Literate	7 (33.3)	14 (66.7)	
Secondary	28 (71.8)	11 (28.2)	
College or higher	211 (92.1)	18 (7.9)	
Occupation			
Employed	187 (90.8)	19 (9.2)	0.001
Unemployed	15 (83.3)	3 (16.7)	
Homemaker	50 (65.8)	26 (34.2)	
Residency			
Urban	229 (88.4)	30 (11.6)	0.001
Rural	23 (56.1)	18 (43.9)	
Number of children			
1–2	155 (86.1)	25 (13.9)	0.350
3–5	82 (82.0)	18 (18.0)	

Chi-square test

There was a statistically significant association between knowledge and participants' education level, occupation,

about the symptoms ranged from 73.3% to 92.7%; however, the participant knowledge about treatment was lower 28%.^[16]

In a South African study by Rajcumar and Paruk, parents of ADHD children had knowledge higher in areas related to symptoms and diagnosis of the disease and lower knowledge related to treatment.^[17]

The lower rate of overall knowledge in this study may be due to the involvement of parents of normal children.

and residency; about half of the participants who had higher education had fair knowledge, while just 1.3% had good knowledge; this was not the same in a South African study by Rajcumar and Paruk, in 2020, and in a Chinese study by Fan *et al.* in which there was no association between knowledge level and the degree of education.^[15,17]

Regarding occupation, the participants who were employed had higher knowledge, in which 51.1% was fair and 1.9% was good, which is different from the study done by Rajcumar and Paruk, in 2020.^[17]

No association was found between the number of children and the parent's knowledge which is the same as in Rajcumar and Paruk's study.^[17]

The majority of participants, 84%, showed a positive attitude toward the disorder; this goes in line with what Amiri *et al.*, in 2016, showed in their study, in which 72.82% of Iranian parents had a positive attitude toward ADHD.^[18] Similar results were in a study by Martínez-Jiménez in 2023, which involved GP doctors in Ireland,^[19] where 58.8% of them expressed a positive attitude toward ADHD. This was different from studies done in Egypt by Aly *et al.*, in 2015, and in Northwest Ethiopia by Amha and Azale, in 2022; the participants who were primary school teachers showed poorer attitude toward ADHD in comparison with the present study.^[20,21]

Parents showed a positive attitude toward interventions that decrease the symptoms of affected children such as decreasing the amount of consumed sugars and artificial additives; And lowering time spent on TV or other devices; this was similar to Alrahili *et al.* in Saudi Arabia.^[22]

There was a significant association between parents with a good attitude and their age, while this was not the case in Fan *et al.*, in which the Chinese parent's attitude had no significant association with their age.^[15]

Parents with higher education had significantly a good attitude in comparison with other degrees of education, and the same was regarding the place of residence in which 88.4% of parents living in the central part had a positive attitude toward the disorder, in contrast with the study by Amiri *et al.*, in 2016, that showed no association between education, residency, and

parents attitude level.^[18] In addition, this study also showed a significant association between employment and attitude, 90.8% of employed parents had a good attitude as with Rajcumar and Paruk's results.

Our study showed no association between the number of children and the parents' attitude.

Concerning community perception of affected children, 57% agreed that ADHD is considered a stigmatizing disorder, and this is consistent with Moldavsky and Sayal in which the parents of ADHD children reported stigmatizing experiences;^[23] this was also confirmed by a systemic review done by Bisset *et al.*, in 2022,^[24] in which studies about community attitudes toward ADHD from Australia, Sweden, Germany, Finland, Korea, Indonesia, and the United States and the result showed negative community attitude toward ADHD.

CONCLUSIONS

Nearly half of the participants had a fair level of knowledge, while the other half had poor knowledge. Parents were more knowledgeable about the treatment and symptoms of ADHD than general knowledge of the disease and its risk factors. Significant associations were found between fair knowledge level and higher education, employment, and living in urban. More than three-quarters of parents showed a positive level of attitude toward ADHD; significant associations were found between attitude level and age, higher education, employment, and living in urban.

Recommendations

Health-care providers have to provide parents with information about normal childhood development. Planned education and behavioral modifications should be adopted in health-care institutions to elevate the knowledge and attitude of parents regarding ADHD and its management.

Larger-scale research should be carried out about the misconception and knowledge of ADHD among parents and others who are involved in its management, including doctors, teachers, and other care providers.

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

- Prevatt FF, Leverini A, American Psychological Association. ADHD Coaching: A Guide for Mental Health Professionals. Washington, Dc: American Psychological Association; 2015.
- American Psychiatric Association. Attention deficit hyperactivity disorder. In: Diagnostic and Statistical Manual of Mental Disorders. 5th ed. Text Revision. Washington, DC: American Psychiatric Association; 2022.
- Sadock BJ, Sadock VA, Ruiz P, Kaplan and Sadock's Synopsis of Psychiatry: Behavioral Sciences/Clinical Psychiatry. 11th ed. Baltimore, MD: Lippincott Williams and Wilkins, Philadelphia; 2014.
- Danielson ML, Bitsko RH, Ghandour RM, Holbrook JR, Kogan MD, Blumberg SJ. Prevalence of parent-reported ADHD diagnosis and associated treatment among U.S. children and adolescents, 2016. *J Clin Child Adolesc Psychol* 2018;47:199-212.
- Munshi A. Knowledge and misperceptions towards diagnosis and management of attention deficit hyperactive disorder (ADHD) among primary school and kindergarten female teachers in Al-Rusaifah district, Makkah city, Saudi Arabia. *Int J Med Sci Public Health* 2014;2:3.
- Centers for Disease Control and Prevention. What is ADHD. Available from: <https://www.cdc.gov/ncbddd/adhd/facts.html>. [Last accessed on 2023 Jul 13].
- Amiri S, Shafiee-Kandjani AR, Fakhari A, Abdi S, Golmirzaei J, Akbari Rafi Z, *et al.* Psychiatric comorbidities in ADHD children: An Iranian study among primary school students. *Arch Iran Med* 2013;16:513-7.
- Efron D, Sciberras E, Hiscock H, Jongeling B, Lycett K, Bisset M, *et al.* The diagnosis of attention-deficit/hyperactivity disorder in Australian children: Current paediatric practice and parent perspective. *J Paediatr Child Health* 2016;52:410-6.
- Alobaidi AK, Ali NS. Attention deficit/hyperactivity disorder among schoolchildren in Baghdad. *J Can Acad Child Adolesc Psychiatry* 2009;18:4-5.
- Aljotherapy AH, Baiee HA. Epidemiological Aspects of Attention Deficit Hyperactivity Disorder among pupils in Al-Hilla City – Babylon Province – Iraq. *Med Legal Update* 2020;20:978-83.
- Al-Ani R, Khaleel Al-Ani R, Al-Sumiadai M, Abdulla AI, Sarhat AR. Prevalence of attention deficit hyperactivity disorder among primary school children in Tikrit city. *Al Anbar Med J* 2021;17:25-9.
- Al-Fatlawi DA, Al-Dujaili AH. Assessment of attention deficit hyperactivity disorders among primary school children in Al-Najaf City. *Indian J Public Health Res Dev* 2019;10:1048.
- Alhraiwi NJ, Ali A, Househ MS, Al-Shehri AM, El-Metwally AA. Systematic review of the epidemiology of attention deficit hyperactivity disorder in Arab countries. *Neurosciences (Riyadh)* 2015;20:137-44.
- Ghanizadeh A. Educating and counseling of parents of children with attention-deficit hyperactivity disorder. *Patient Educ Couns* 2007;68:23-8.
- Fan X, Ma Y, Cai J, Zhu G, Gao W, Zhang Y, *et al.* Do parents of children with ADHD know the disease? Results from a cross-sectional survey in Zhejiang, China. *Children (Basel)* 2022;9:1775.
- Dodangi N, Vameghi R, Habibi N. Evaluation of knowledge and attitude of parents of attention deficit/hyperactivity disorder children towards attention deficit/hyperactivity disorder in clinical samples. *Iran J Psychiatry* 2017;12:42-8.
- Rajcumar NR, Paruk S. Knowledge and misconceptions of parents of children with attention-deficit hyperactivity disorder at a hospital in South Africa. *S Afr Fam Pract* (2004) 2020;62:e1-8.
- Amiri S, Shafiee-Kandjani AR, Noorazar SG, Rahmani Ivrih S, Abdi S. Knowledge and attitude of parents of children with attention deficit hyperactivity disorder towards the illness. *Iran J Psychiatry Behav Sci* 2016;10:e122.
- Martinez-Jiménez M. Parental non employment in childhood and children's health later in life. *Econ Hum Biol* 2023;49:101241.
- Aly ED, Mohammed FM, Zamzam A. Teachers' perception and attitudes toward attention deficit hyperactivity disorder in primary schools at Assiut city. *AAMJ* 2015;13:165-73.
- Amha H, Azale T. Attitudes of primary school teachers and its associated factors toward students with attention deficit hyperactivity disorder in Debre Markos and Dejen Towns, Northwest Ethiopia. *Front Pediatr* 2022;10:805440.
- Alrahili N, Al Harthi MA, Ababtain SJ, Al Sharif SS, Alnuwaysir MA, Al Huzaimi RF. Parental attitudes and beliefs toward attention deficit hyperactivity disorder in prince sultan military medical city, Riyadh city. *Psych* 2022;4:238-46.
- Moldavsky M, Sayal K. Knowledge and attitudes about attention-deficit/hyperactivity disorder (ADHD) and its treatment: The views of children, adolescents, parents, teachers and healthcare professionals. *Curr Psychiatry Rep* 2013;15:377.
- Bisset M, Winter L, Middeldorp CM, Coghill D, Zendarski N, Bellgrove MA, *et al.* Recent attitudes toward ADHD in the broader community: A systematic review. *J Atten Disord* 2022;26:537-48.