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A STUDY OF ADHD & IT'S RELATIONSHIP TO IQ

A THESIS
Submitted to the department of medcine in Al-Nahrain College of Medicine as partial Fulfillment of the requirements for graduation

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DEDICATION

To my beloved parents, who were there for me

With their support and encouragement,

I dedicate this work to all their loving tears and beautiful smiles.

To all my respectable teachers,

Who enlightened me with their knowledge and understanding

To all my fellow students, friends, and colleagues

For their unconditional Support and love.

To all patients out there, hoping this little work will do something to help them more in their sufferings.

ABSTRACT

BACKGROUND:

ADHD is the most prevalent childhood psychiatric disorder, which affects 5–9% of children, consists of a combination of severe overactive, impulsive, and inattentive behaviours. The relationship between ADHD & IQ level has been suggested for studying and compare with other researches.

PATIENTS AND METHOD:

A Cross sectional study was conducted with
a total of 14 children with of both gender ranging from (4-13) years old. All interviewed, and history was taken using DSM- IV criteria. Mean and standard deviation was done.

RESULTS:

In our study, the majority of ADHD patients, 43% were having FSIQ>100, Individuals with ADHD present characteristics that are commonly observed in gifted children. 36% of ADHD patients examined here presented below-average scores FSIQ<80. Correlations between prevalence of ADHD and IQ level provide support to the hypothesis of high IQ level among patients with ADHD.

CONCLUSION:

Our findings support the hypothesis of high IQ level among patients with ADHD, with little effects of genetic factors, socioeconomic state and parents educational regarding low IQ in ADHD patients. Preterm delivary and first order birth might be a risk factor for developing ADHD.

LIST OF ABBREVIATIONS

(ADHD): Attention deficit hyperactivity disorder

(IQ): Intelligence quotient

(FSIQ): Full Scall Intelligence quotient

CHAPTER ONE:
INTRODUCTION AND AIMS

1.1 INTRODUCTION

ADHD in children

Attention deficit hyperactivity disorder (ADHD), which affects 5–9% of children [(1)], consists of a combination of severe overactive, impulsive, and inattentive behaviours. Although ADHD is a categorical diagnosis, several studies support the hypothesis that it represents the extreme of a behaviour that varies continuously throuhout the entire population.[(2)]

Definition:

ADHD is a neurobehavioral disorder characterized by inattentiveness, impulsiveness, and hyperactivity, which involves significant impairments in multiple areas of daily life.[(3)] It is usually diagnosed during childhood, but its persistence in adults is now recognized as highly prevalent.

ADHD is often comorbid with conduct disorder, anxiety, depression, tic disorders and pervasive developmental disorders.[(4)]

Diagnosis and clinical features :

According to Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), Text Revision **(table1)** [(5)] , ADHD diagnostic criteria requires that symptoms are present before the age of 7 years, are displayed in two or more settings for at least 6 months, and produce significant impairments.

Subtypes

ADHD is divided into three subtypes: predominantly inattentive (ADHD-PI or ADHD-I), predominantly hyperactive-impulsive (ADHD-PH or ADHD-HI), and combined type (ADHD-C). **(table1)**[5]

Girls with ADHD tend to display fewer hyperactivity and impulsivity symptoms but more symptoms pertaining to inattention and distractability**.** [6] Symptoms of hyperactivity tend to go away with age and turn into "inner restlessness" in teens and adults with ADHD. [7]

Epidemiology:

ADHD is the most prevalent childhood psychiatric disorder, affecting approximately 5% to 7% of children worldwide. [8]

Studies estimate that the prevalence of ADHD in adults is between 2.5% and 4.9%[9] The adult ADHD is usually characterized by predominant inattentiveness symptoms, and hyperactive features are less observed**.**[10] It is also more frequently associated with psychiatric comorbidities.[11]

Causes and risk factors:

The aetiology of ADHD is multifactorial:

Genetics: twin studies indicate that the disorder is often inherited from one's parents with genetics determining about 75% of cases. [12]

Siblings of children with ADHD are three to four times more likely to develop the disorder than siblings of children without the disorder. [13] Genetic factors are also believed to be involved in determining whether ADHD persists into adulthood. [14]

Enviroment: Alcohol intake during pregnancy can cause fetal alcohol spectrum disorderswhich can include ADHD or symptoms like it.[15] Children exposed to certain toxic substances, such as lead or polychlorinated biphenyls, may develop problems which resemble ADHD.[16]

Exposureto the organophosphate insecticides chlorpyrifos and dialkyl phosphate is associated with an increased risk; however, the evidence is not conclusive.[17] Exposure to tobacco smoke during pregnancy can cause problems with central nervous system development and can increase the risk of ADHD.[18] Extreme premature birth, very low birth weight, and extreme neglect, abuse, or social deprivation also increase the risk [18] as do certain infections during pregnancy, at birth, and in early childhood.

Society: The older children in a class have been found to be more likely to be diagnosed as having ADHD, possibly due to their being developmentally behind their younger classmates.[19] This effect has been seen across a number of countries.[20] They also appear to use ADHD medications at nearly twice the rate as their peers.[21]

In some cases, the diagnosis of ADHD may reflect a dysfunctional family or a poor educational system, rather than problems with the individuals themselves.[22] In other cases, it may be explained by increasing academic expectations, with a diagnosis being a method for parents in some countries to get extra financial and educational support for their child. [23] Typical behaviors of ADHD occur more commonly in children who have experienced violence and emotional abuse.[24]

Course and prognosis:

ADHD persists into adulthood in about 30–50% of cases.[25] Those affected are likely to develop coping mechanisms as they mature, thus compensating to some extent for their previous symptoms.[26] Children with ADHD have a higher risk of unintentional injuries.[27] Effects of medication on functional impairment and quality of life (e.g. reduced risk of accidents) have been found across multiple domains. But learning disorders and executive function deficits do not seem to respond to ADHD medications. [28]

Management

The management of ADHD typically involves counseling or medications either alone or in combination. While treatment may improve long-term outcomes, it does not get rid of negative outcomes entirely.[29] Medications used include stimulants, atomoxetine, alpha-2 adrenergic receptor agonists, and sometimes antidepressants.[30] In those who have trouble focusing on long-term rewards, a large amount of positive reinforcement improves task performance.[31]ADHD stimulants also improve persistence and task performance in children with ADHD. [32]

Behavioral therapies: There is good evidence for the use of behavioral therapies in ADHD and they are the recommended first line treatment in those who have mild symptoms or are preschool-aged.[33]

Psychological therapies used in:psychoeducationalinput ,behaviortherapy,cognitive behavioral therapy (CBT), interpersonal psychotherapy, family therapy, school-based interventions, social skills training, behavioral peer intervention,

organization training,[33] parent management training,[34] and neurofeedback.[35] Parent training may improve a number of behavioral problems including oppositional and noncompliant behaviors. [36]

Medications: stimulants medications are the pharmaceutical treatment of choice.[37] They have at least some effect on symptoms, in the short term, in about 80% of people [38] Methylphenidate appears to improve symptoms as reported by teachers and parents.[38] Stimulants may also reduce the risk of unintentional injuries in children with ADHD. [39]

There are a number of non-stimulant medications, such as atomoxetine, bupropion, guanfacine, and clonidine that may be used as alternatives, or added to stimulant therapy.[37]

Diet: Dietary modifications may be of benefit to a small proportion of children with ADHD. [40] A 2013 meta-analysis found less than a third of children with ADHD see some improvement in symptoms with free fatty acid supplementation or decreased eating of artificial food coloring.[41] These benefits may be limited to children with food sensitivities or those who are simultaneously being treated with ADHD medications.[41]

An intelligence quotient (IQ)

Definition:

It is a total score derived from several standardized tests designed to assess human intelligence. The abbreviation "IQ" was coined by the psychologist William Stern for the German term *Intelligenzquotient*, his term for a scoring method for intelligence tests at University of Breslau he advocated in a 1912 book.[(42)] Historically, IQ is a score obtained by dividing a person's mental age score, obtained by administering an intelligence test, by the person's chronological age, both expressed in terms of years and months. The resulting fraction is multiplied by 100 to obtain the IQ score. [(43)]

Current tests:

There are a variety of individually administered IQ tests in use in the English-speaking world.[(44)] The most commonly used individual IQ test series is the Wechsler Adult Intelligence Scale for adults and the Wechsler Intelligence Scale for Children for school-age test-takers. Other commonly used individual IQ tests (some of which do not label their standard scores as "IQ" scores) include the current versions of the Stanford-Binet Intelligence Scales, Woodcock-Johnson Tests of Cognitive Abilities, the Kaufman Assessment Battery for Children, the Cognitive Assessment System, and the Differential Ability Scales. Goodenough- Harris. Drawing Test is used to evaluate intelligence, the test administrator uses the Draw-a-Person: QSS (quantitative scoring system).[(53)]

Reliability and validity :

Psychometricians generally regard IQ tests as having high statistical reliability.[45] A high reliability implies that – although test-takers may have varying scores when taking the same test on differing occasions, and although they may have varying scores when taking different IQ tests at the same age – the scores generally agree with one another and across time. Like all statistical quantities, any particular estimate of IQ has an associated standard error that measures uncertainty about the estimate. For modern tests, the standard error of measurement is about three points. Clinical psychologists generally regard IQ scores as having sufficient statistical validity for many clinical purposes.[46]

Classification

IQ classification is the practice used by IQ test publishers for designating IQ score ranges into various categories with labels such as "superior" or "average." [47] IQ classification was preceded historically by attempts to classify human beings by general ability based on other forms of behavioral observation. Those other forms of behavioral observation are still important for validating classifications based on IQ tests.

1.2 AIM

i. To identify the relationship between ADHD & IQ level.

ii. To study the sociodemographic data.

iii. To compare with other researchers.

CHAPTER TWO:
REVIEW OF LITERATURE

In Brazil (2010) Students attending public schools, in the first to fifth grades. Fifteen of the participants were identified to have a full-scale IQ ≥ 120. Our data support the hypothesis that ADHD is a valid diagnosis in children with high IQs. **(48)**

In UK (2004) a study fouds That the co-occurrence of ADHD and lower IQ has genetic origins raises the possibility that specific genes may influence brain networks that underlie both ADHD and IQ. **(49)**

In Denmark (2009) Studies of various methodologies are reviewed. Correlation studies show mostly weak associations between IQ scores and attention deficits. The associations between IQ and attention deficits in ADHD are generally modest, with the mean influence on IQ probably amounting to 2 to 5 IQ points.**(50)**

In Brazil (2014) Adults with ADHD and more elevated IQ show less evidence of executive functioning deficits compared with those with ADHD and standard IQ, suggesting that a higher degree of intellectual efficiency may compensate deficits in executive functions, leading to problems in establishing a precise clinical diagnosis.**(51)**

Table (2-1): show review of literature

No.	year	Country	Reference No.	Age	Iq level
1	2010	Brazil	(48)	Primary school age	high IQs
2	2004	United Kingdom	(49)	All twin born in 1994–1995	lower IQ
3	2009	Denmark	(50)	childhood and adolescent	Effects are generally modest
4	2014	Brazil	(51)	adults	higher degree of IQ may compensate deficits in executive functions

CHAPTER THREE:
PATIENTS AND METHODS

3.1 Design:

This study is observation descriptive and cross sectional study.

3.2 Setting:

The study was done in psychiatric outpatient clinic of AL_Kadhemia teaching hospital in Baghdad city in Iraq.

3.3 Period of study:

from 17th October to 28th March. 2018_2019.

3.4 Sample & data collection:

A total of 14 child aged from 3_10 years, 11 of them were males and 3 of them were females. Were consecutively evaluated at the psychiatric outpatient clinic of AL-Kadhemia teaching hospital.

3.5 Instruments:

Each patient was interviewed alone, and after taking history (DSM- IV criteria) **(table 1)** & sociodemographic data **(appendix 1).**

Each had to undergo to the Conner's questionnaire short version **(appendix 2).**

Conner's questionnaire is an assessment tool used to obtain the parent's observations about the youth's behavior. This instrument is designed to assess Attention Deficit/Hyperactivity Disorder (ADHD). When used in combination with clinical symptoms and this can provide valuable information for guiding assessment decisions.[52]

we used Goodenough-Harris Drawing Test to measure IQ level (appendix 3), *Goodenough-Harris Drawing Test* is used to evaluate intelligence, the test administrator uses the Draw-a-Person: QSS (quantitative scoring system). This system analyzes fourteen different aspects of the drawings (such as specific body parts and clothing) for various criteria, including presence or absence, detail, and proportion. Goodenough's original scale had 46 scoring items for each drawing, with 5 bonus items for drawings in profile. [53] IQ classification system according to Goodenough test is shown in **(table 2).**

3.6 Inclusion criteria:

ADHD patients of both gender ranging from (4-13) years old.

3.6 Exclusion criteria:

1- patients or their parents who refused to participate as respondent.
2- patients who had conner's scale of less than fifteen.

3.7 Statistical analysis

This is a cross sectional descriptive study, in which continuous data were expressed as mean ± standard deviation. While categorical data were expressed as frequency and percentage. The software used were Microsoft excel 2010.

CHAPTER FOUR:
RESULTS

Table (4.1)

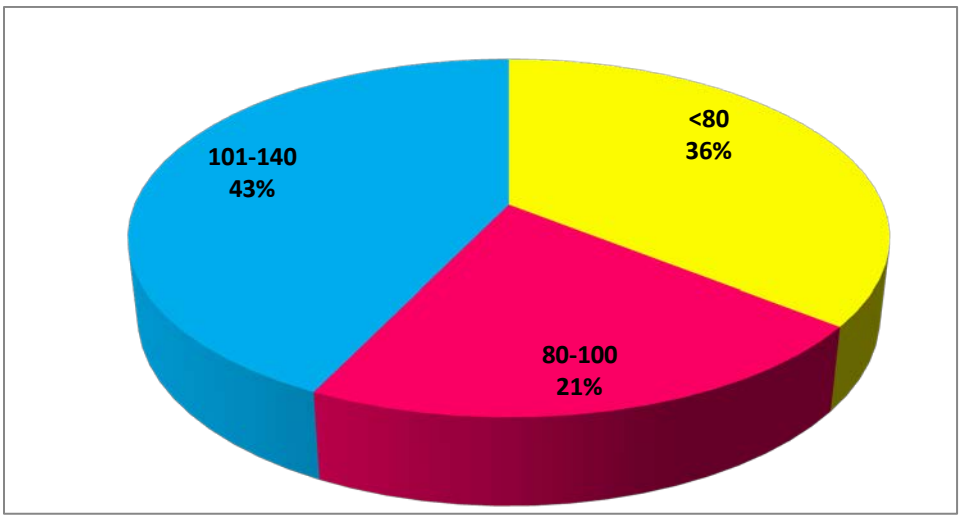
We identified 14 patients with ADHD in which Conner's scale mean value was 25.64±2.06 (mean ± SD), the average age in our sample was 6.75±1.68, and the average Goodenough scale was 14.14±10.30 with FSIQ average of 96.71±25.78. The results of the Goodenough and IQ Scale and index are summarized in Table 4.1.

Table (4.1): mean of some parameters in ADHD

Parameter	mean	SD	Range
Age (yr)	6.75	1.68	4-10
Conner scale	25.64	2.06	22-28
Goodenough scale	14.14	10.30	1-38
IQ score	96.71	25.78	61-136

Figure (4.1)

Of these fourteen ADHD patients, 43% with FSIQ of more than 100 , 36% with FSIQ of less than 80 and 21% with FSIQ between 80_100 %.



Figure(4.1): IQ percentage in ADHD cases.

Figure 4.2

The majority, 79% of the cases, were males while 21% were females.

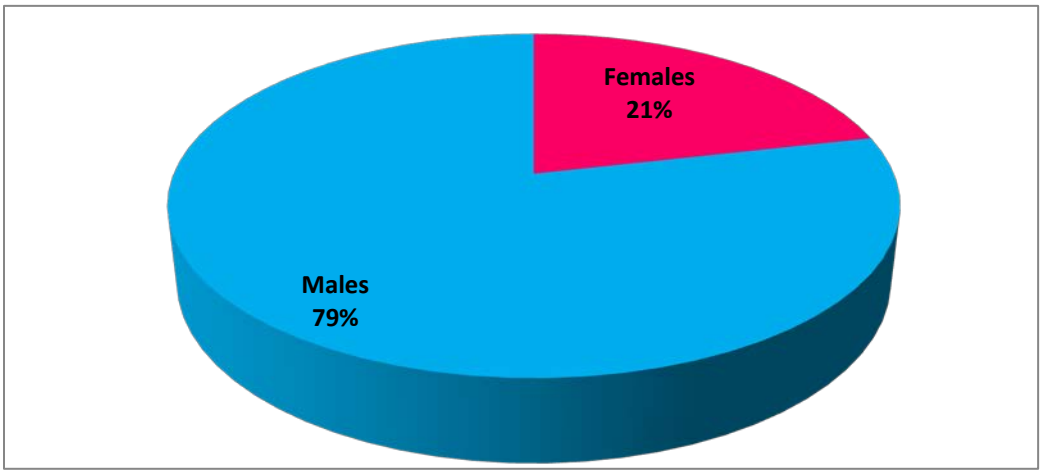


Figure (4.2): Sex percentage in ADHD cases.

Figure (4.3)

Most of patients with ADHD in our sample were attending primary school (64%), while 29% were attending kindergarten and only 7% were not having education.

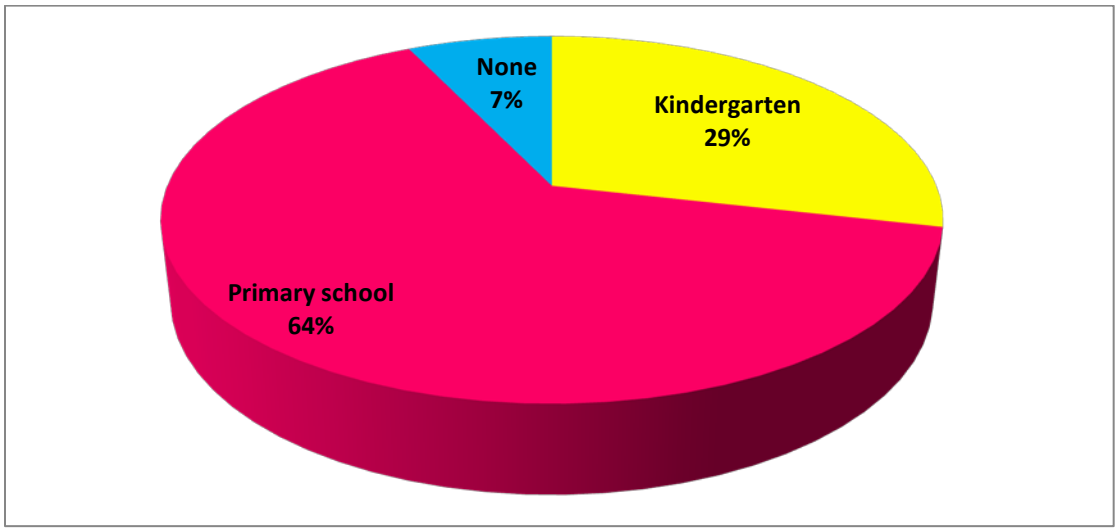


Figure (4.3): Level of eduction in ADHD cases

Figure (4.4)

school performance in most of the cases was below the average (57%), while the remaining was within the average level (43%).

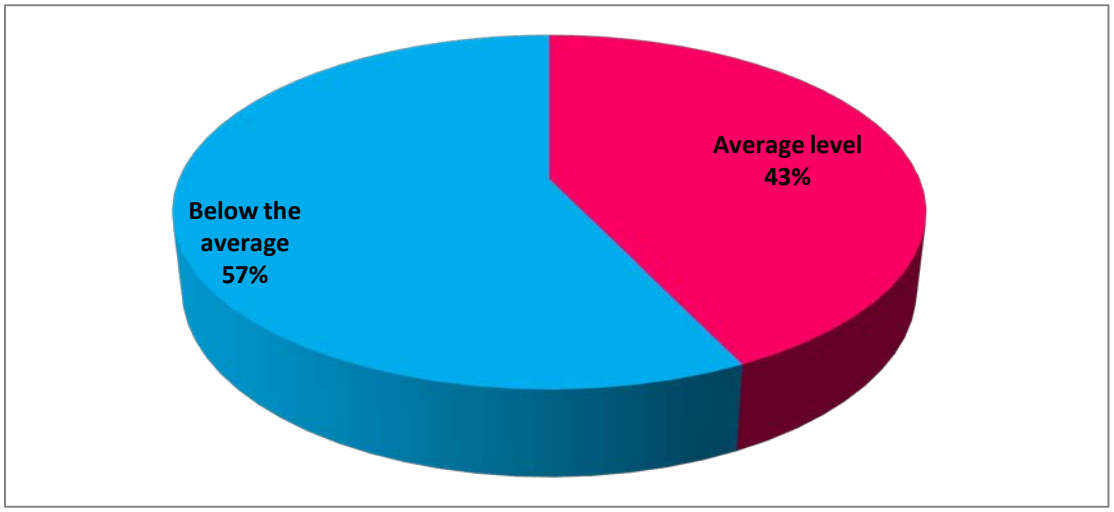


Figure (4.4): School performance in ADHD cases.

Figure (4.5)

most of the families in our study group were of medium socioeconomic status (86%), while only (14%) were of low socioeconomic status.

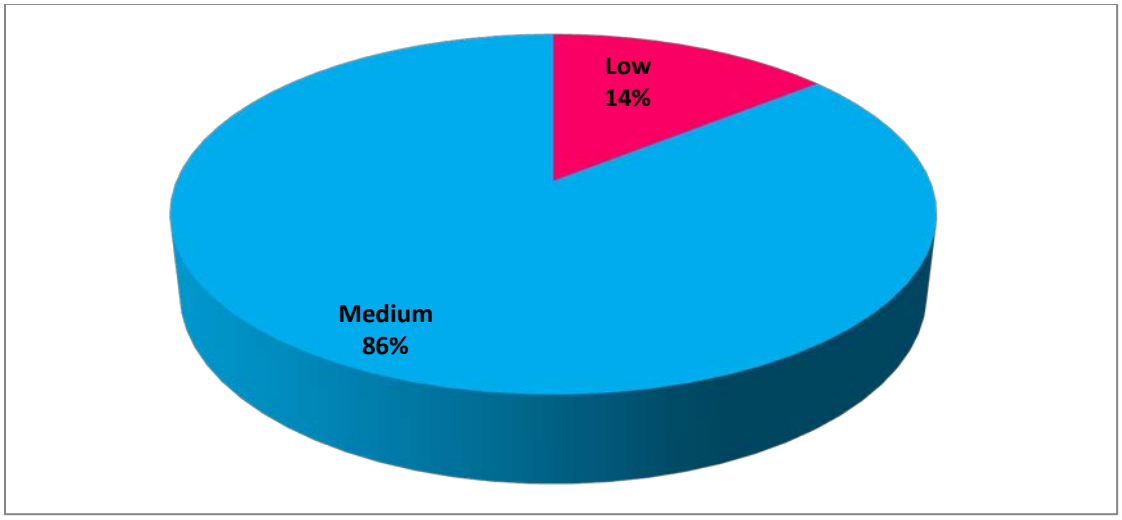


Figure (4.5): Socioeconomic status of the family of the child with ADHD

Table 4.2

The results showed, 2 participants of 14 cases with ADHD presented with no other psychological issues, 3 participant also had mood disorder, 5 participants presented comorbidity with learning disorders and/or disruptive behaviors, whereas 4 participants presented comorbidity with mood, behavioral, and learning disorders. 3 patients had positive past Medical history of chronic physical disease, As summarized in table (4.2).

Table 4.2 Clinical Characteristics of the Sample

Patients NO.	Psychological disorder	Medical disorder
1	anger, irritability, frequent sadness or crying .	N
2	Agressiveness, stiffness, rule beaker	N
3	Frequent sadness or crying	N
4	Anxity, depression	Asthma
5	anger, irritability, arguing,	N
6	N	N
7	anger, irritability, arguing	N
8	N	epilepsy
9	anger, irritability, arguing, , learning disorder	N
10	anger, irritability, arguing,	N
11	learning difficulties	celiac disease
12	anger, irritability, arguing, , learning disorder	N
13	learning disorder	N
14	Depressed mood, aggressiveness	N

Figure (4.6)

Most of cases in our study group showed a developmental delay in form of speech and walking (57%), while 43% showed no delay in speech or walking.

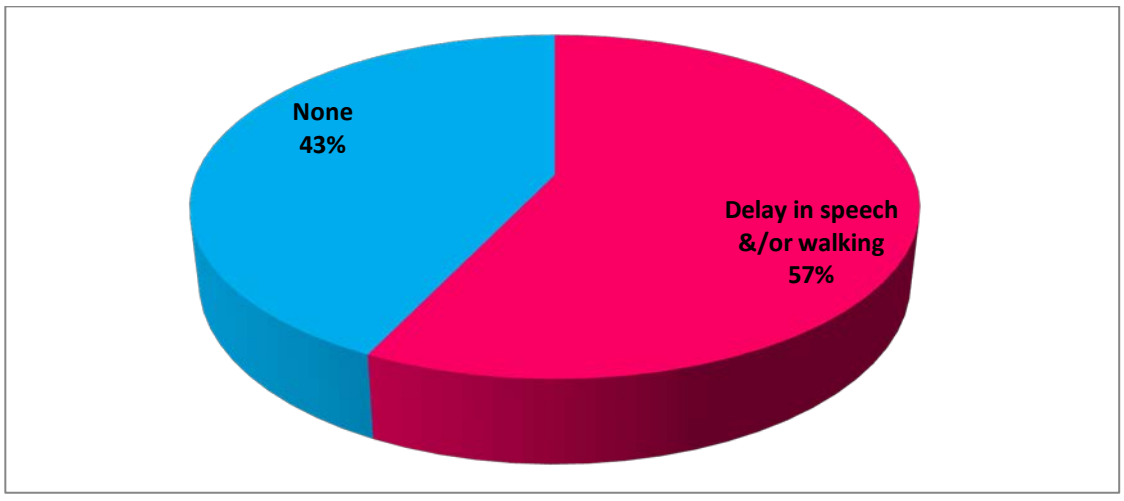


Figure (4.6): Developmental history of the children with ADHD

Figure (4.7)

Our results showed 50% of cases had family history of chronic medical diseaes such as hypertention, Diabetes mellitus and Asthma, and 43% had no family history of chronic medical diseases, while only 7% had family history of ADHD .

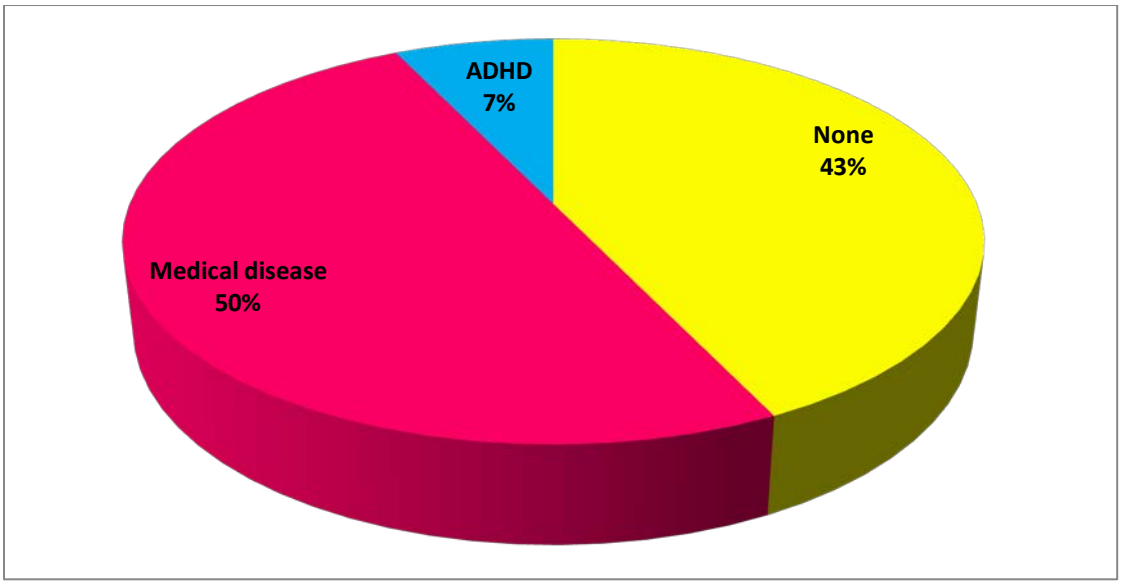


Figure (4.7): Family history of the children with ADHD

Figure (4.8)

With regard to the duration of pregnancy, 86% of children were term, while 14% were preterm.

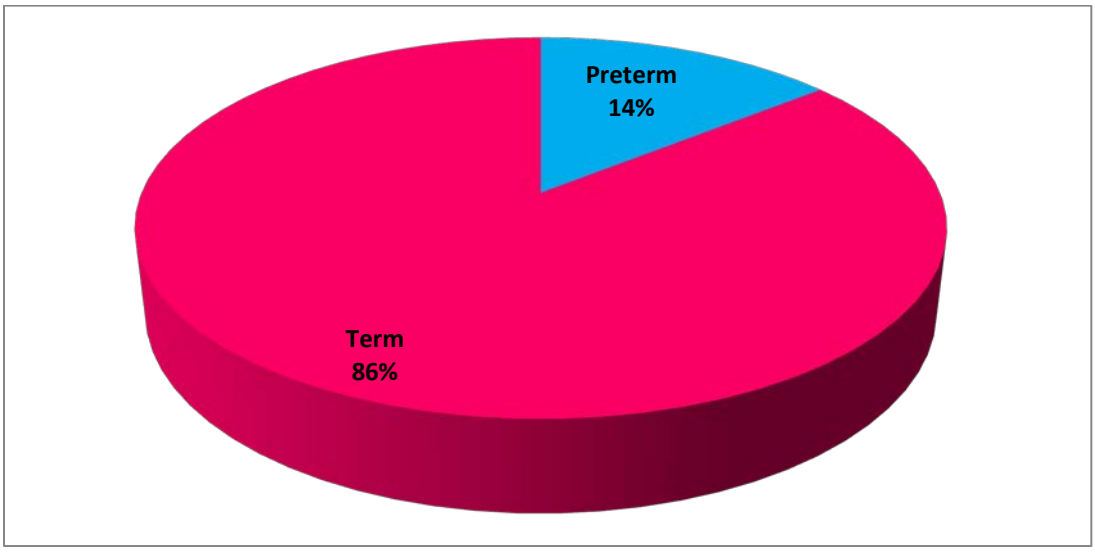


Figure (4.8): Duration of pregnancy

Table (4.3)

most children in our study group were first born child.

Child order	Sibling no.
First	0
First	0
First	0
First	1
First	1
First	1
First	1
First	2
Last	1
Last	2
Last	3
Last	6
Second	2
Third	4

Table (4.3): Order and number of siblings

CHAPTER FIVE:
DISCUSSION AND CONCLUSIONS

5.1 DISSCUSION

In our study, the majority of ADHD patients 43% were having FSIQ>100,

In Brazil study indicate that 10 primary school students out of 15 participants with FSIQ>120 met DSM-IV diagnostic criteria for ADHD combined type. [48]

In Brazil Antshel and colleagues (2007) were the first to report an empirical study that validated ADHD diagnosis in a group of children with an FSIQ ≥ 120. Recent studies have also validated ADHD diagnosis in high-IQ adults [54]

Individuals with ADHD present characteristics that are commonly observed in gifted children. Symptoms such as high activity levels, daydreaming, attention deficits, and difficulty following rules are common in both ADHD and gifted children.[55] A multiprofessional clinical and psychological evaluation to differentiate between childhood psychopathology and the normal range of developmental characteristics of gifted children is of outmost importance. It is also important to consider the situation and setting under which each study is conducted. Unlike ADHD children, gifted children typically do not show behavioral problems in all situations.[56]

Oftentimes, the students who are both gifted and have ADHD are recognized by their weaknesses, because they are bored or because they are identified as having behavior problems in the classroom. Due to these factors, students who are gifted or gifted with ADHD are being misdiagnosed.[57]

It is crucial that all teaching professionals be educated about gifted children as well as the possibility of dual diagnosis. It is estimated that about 10% of people in the general population have an FSIQ ≥ 120 [58] and that about 5% to 7% of school-aged children have ADHD [59] It is, therefore, feasible that there would be some overlap between these two populations.

Furthermore, 36% of ADHD patients examined here presented below-average scores FSIQ<80. Our findings in children are complementary to previous findings of lower quality-of-life ratings and the presence of functional impairments across occupational, social-family domains [(60)] and executive-function impairments [(61)] in high-IQ/ADHD adults.

Although some studies have shown that the majority of children with an ADHD diagnosis have a somewhat lower IQ (by about 9 points) than their peers without ADHD [(62)], other studies found no significant difference in FSIQ between ADHD discordant monozygotic twin pairs. The mean FSIQ in twins with ADHD was 101.4 (SD = 12.8), whereas that in the unaffected group was 104.0 (SD = 9.5). This result suggests that performance on intelligence tests is relatively unaffected by symptoms of ADHD.[(63)]

The hypothesis of relative independence between FSIQ and attention deficits is supported by the nonsignificant difference in mean FSIQ scores observed in a small sample of monozygotic twins discordant for ADHD.[(64)] More important,this hypothesis is supported by the results from factor analytic studies, as relatively small g loadings have been observed on most measures of attention and executive functions in samples of children with ADHD [(65)] ,a high proportion of children with ADHD symptoms [(66)] ,and a high incidence of ADD/ADD-H [(67)] ,The degree to which performance on a given test is unaccounted for by g may reflect specific or non-g abilities and error variance. [(68)]

Analyzing the effect of stimulant drugs on IQ score showed no significant since most cases have negative drug history except for one case.

The IQ improvements with stimulant drug treatment have been thought of as probable secondary effects of enhanced attention processes and not representing significant changes in basic intelligence.[(69)] Thus, IQ improvements related to short-term stimulant medication may reflect the size of a pretreatment attention-related influence on IQ assessments. A direct stimulant drug effect on intelligence tests performance cannot be ruled out, but it is unlikely that stimulant medication sufficiently influences the multiple neural networks necessary for improving gloaded problem solving, thus resulting in a true increase in intelligence.[(70)]

Nevertheless, given the evidence of no more than modest associations between IQ scores and measures of attention deficits in ADHD, the size of inattention-related influence on IQ scores may easily be overestimated and the intellectual deficits in children with low IQ and ADHD may be underestimated. An inattention-related mean influence on IQ assessment in the 2- to 5-FSIQ point range may serve as a reasonable benchmark when interpreting IQ scores obtained before stimulant drug treatment has been initiated in children and adolescents with ADHD.

The present sample of ADHD children exhibited a pattern of psychiatric comorbidity, including mood disorders, disruptive behavior, and learning disorders, similar to observations in average-IQ ADHD children.[71]

Our study cohort presented additional impairments, namely, social problems, rule-breaking, and aggressive behaviors, which were in the subclinical range at both school and home settings. These findings are noteworthy, given that the main impediments associated with ADHD are attributed to social problems.[72]

The recent study sample also exhibited medical comorbidity, like epilepsy, asthma & celiac disease.

In Minnesota (2011) a population-based cohort study found a strong trend toward a higher incidence of epilepsy among children with ADHD than among controls without ADHD (hazard ratio 2.7, confidence interval 0.9–7.7).[73]

In Norway (2016) a systematic review found a well established association between ADHD and obesity, asthma and sleep disorders, and tentative evidence for association with celiac disease and migraine,[74] while another 2016 systematic review did not support a clear link between celiac disease and ADHD, and stated that routine screening for celiac disease in people with ADHD is discouraged.[74]

In our study group, 57% of school aged patients with ADHD were having poor school performance,

In US Silverman, (2002) studied learning disorders with over 4,000 children during a 22 year span. Her results concluded that one out of every six children has a learning disorder, neurological disorder, or ADHD.[75]

Previous research suggests that the association with IQ may be particularly strong for inattentiveness.[76] In the current data the association was stronger for both inattention and hyperactivity.

Analyzing the genetic causes of ADHD shows only one case with family history of ADHD from first degree relative, unlike other studies which show strong genetic influence.

In United Kingdom (2004) Twins study indicate that the disorder is often inherited from one's parents with genetics determining about 75% of cases [77] Siblings of children with ADHD are three to four times more likely to develop the disorder than siblings of children without the disorder.[78] Genetic factors are also believed to be involved in determining whether ADHD persists into adulthood.[79]

Analyzing the environmental causes of ADHD reviled no significant role, in comparism to other studies which shows important relation between prenatal history of infectious diseaes , smoking , trauma, or toxin exposure as a risk factor for ADHD .[80]

In our study 14% of patients were preterm during their birth, and there is negative history of social deprevation in comparism to other studies.

In UK (2011) a study about causes of ADHD stated that an extreme premature birth, very low birth weight, and extreme neglect, abuse, or social deprivation also increase the risk of developing ADHD.[81]

Analyzing the socioeconomic factors as a causes of ADHD shows weak relation as 86% of families were of medium socioeconomic level and most of the parents were highly educated.

In comparism to, the diagnosis of ADHD may reflect a dysfunctional family or a poor educational system, rather than problems with the individuals themselves.[22] In other cases, it may be explained by increasing academic expectations, with a diagnosis being a method for parents in some countries to get extra financial and educational support for their child.[23]

In our study, there was 79% males and 21% females , that support the hypothesis that It is diagnosed approximately three times more often in boys than in girls.[82]

Analyzing the developmental delay in patients with ADHD shows 57% with speech & or walking delay or difficulties supported the hypothesis that most ADHD children have developmental delay.

The results are also consistent with research in Norway (2013) showing that ADHD symptoms are specifically related to deficits in verbal comprehension, receptive and expressive language, and gross motor coordination.[83] In UK (2007) found that 55.2% of a consecutive sample of 91 children with ADHD met diagnostic criteria for Developmental Coordination Disorder, 23.2 % for Expressive Language Disorder, and 9.5% for Phonological Disorder.[84] In USA (2008) a study Conversely,[85] found that among children with a speech sound disorder and specific language impairment, 39% met diagnostic criteria for ADHD. The specific association with language and motor skills problems suggests that in some cases, ADHD symptoms may be functionally related to the conditions responsible for the language or motor skills problems.

Most of the cases in this study was (8 out of 14) for first birth-order child, supporting the hypothesize that being the firstborn is a risk factor for developing ADHD.

In Spain (2012) The bivariate analysis showed that ADHD was associated with birth order and that firstborn children had nearly twice the ADHD risk of children with other birth orders.[86]

In our study, we analyzed behavior, emotional, and attentional characteristics at both home and school settings, one of the DSM-IV-TR criteria for ADHD diagnosis [87] It is also important to note that the participants in our study were referred to us because of behavioral abnormality.

If communities want to do something positive on this issue they can look at how mental health screening and services are being provided in the schools, ensure that there are enough school support staff (social workers, counselors, school psychologists) to assist students.

5.2 CONCLUSIONS

1- Our data support the hypothesis of high IQ level among patients with ADHD.
2- There is little effects of genetic factors regarding low IQ in ADHD patients in our study.
3- ADHD children exhibited a pattern of medical and psychiatric comorbidity.
4- Children with ADHD might have speech difficulty or delay as well as delay in walking.
5- Children with ADHD have poor school performance because they are identified as having behavior problems in the classroom.
6- Preterm delivary and first order birth might be a risk factor for developing ADHD.
7- Male affected more than female.
8- Socioeconomic state and parents educational level have little effect on developing ADHD in our study.

CHAPTER SIX:
LIMITATIONS AND RECOMMENDATIONS

6.1 LIMITATIONS

1. This work was limited by a very small sample (N = 14), Stigma of mental illness might be a factor behind poor consultations or seeking psychiatric help.

2. The duration suggested for research was too short to conduct such study.

3. Poverty of social awareness provide less number of patient attending psychiatric clinic.

4. this study lacked some of the gold standards of empirical research, such as having a control group .

6.2 RECOMMENDATIONS

1. Performing additional empirical research employing a larger sample and appropriate diagnostics measures about the intelligence quation in children with ADHD.

2. Similar studies is recommended to be done for adults with ADHD.

3. Training of social workers in primary schools to do initial interview, revealing mental illness, and advised to send for psychiatric treatment.

4. there is a need for identification, and development of behavioral, emotional, and teaching strategies for high-IQ/ ADHD children.

Referances

1. Swanson, J., Castellanos, F. X., Murias, M., LaHoste, G., & Kennedy, J. (1998). Cognitive neuroscience of attention deficit hyperactivity disorder and hyperkinetic disorder. Current Opinion in Neurobiology, 8, 263-271.
2. Biederman J, Faraone SV, Doyle A, Lehman BK, Kraus I, Perrin J, Tsuang MT. 1993. Convergence of the Child Behavior Checklist with structured interview-based psychiatric diagnoses of ADHD children with and without hyperactivity. J Child Psychol Psychiatry 34:1241–1251
3. Franke, B., Faraone, S. V., Asherson, P., Buitelaar, J., Bau, C. H. D., & Ramos-Quiroga, J. A. (2012). The genetics of attention deficit/hyperactivity disorder (ADHD) in adults, a review. Molecular Psychiatry, 17, 960-987.
4. Ishii T, Takahashi O, Kawamura Y, Ohta T. Comorbidity in attention deficit-hyperactivity disorder. Psychiatry Clin Neurosci. 2003
5. (DSM-IV-TR; American Psychiatric Association, 2000)
6. Gershon J (January 2002). "A meta-analytic review of gender differences in ADHD". Journal of Attention Disorders
7. Kooij SJ, Bejerot S, Blackwell A, Caci H, Casas-Brugué M, Carpentier PJ, et al. (September 2010). "European consensus statement on diagnosis and treatment of adult ADHD: The European Network Adult ADHD"
8. McCracken, J. (1998). Textbook of pediatric neuropsychiatry. Washington, DC: American Psychiatric Association Press.
9. Simon, V., Czobor, P., Bálint, S., Mészáros, A., & Bitter, I. (2009). Prevalence and correlates of adult attention-deficit hyperactivity disorder: Meta-analysis. British Journal of Psychiatry, 194, 204-211.
10. Franke, B., Faraone, S. V., Asherson, P., Buitelaar, J., Bau, C. H. D., & Ramos-Quiroga, J. A. (2012). The genetics of attention deficit/hyperactivity disorder (ADHD) in adults, a review. Molecular Psychiatry, 17, 960-987.
11. Brown, A., Biederman, J., Valera, E., Lomedico, A., Aleardi, M., Makris, N., & Seidman, L. J. (2012). Working memory network alterations and associated symptoms in adults with ADHD and bipolar disorders. Journal of Psychiatric Research, 46, 476-483.
12. National Collaborating Centre for Mental Health (2009). Attention Deficit Hyperactivity Disorder: Diagnosis and Management of ADHD in Children, Young People and Adults
13. Nolen-Hoeksema S (2013). Abnormal Psychology (Sixth ed.). p. 267
14. Franke B, Faraone SV, Asherson P, Buitelaar J, Bau CH, Ramos-Quiroga JA, et al. (October 2012). "The genetics of attention deficit/hyperactivity disorder in adults, a review". Molecular Psychiatry.
15. Burger PH, Goecke TW, Fasching PA, Moll G, Heinrich H, Beckmann MW, Kornhuber J (September 2011). "[How does maternal alcohol consumption during pregnancy affect the development of attention deficit/hyperactivity syndrome in the child]". Fortschritte der Neurologie-Psychiatrie (Review) (in German).
16. NIMH (2013). "Attention Deficit Hyperactivity Disorder (Easy-to-Read)". National Institute of Mental Health.
17. de Cock M, Maas YG, van de Bor M (August 2012). "Does perinatal exposure to endocrine disruptors induce autism spectrum and attention deficit hyperactivity disorders? Review". Acta Paediatrica (Review. Research Support, Non-U.S. Gov't)
18. NIMH (2013). "Attention Deficit Hyperactivity Disorder (Easy-to-Read)". National Institute of Mental Health.

19. Holland, Josephine; Sayal, Kapil (2018-10-06). "Relative age and ADHD symptoms, diagnosis and medication: a systematic review". European Child & Adolescent Psychiatry.
20. [110] Stimulants for ADHD in children: Revisited | Therapeutics Initiative".
21. Stockman JA (2016). Year Book of Pediatrics 2014 E-Book. Elsevier Health Sciences. p. 163
22. "Mental health of children and adolescents" (PDF). 15 January 2005.
23. Mayes R, Bagwell C, Erkulwater JL (2009). Medicating Children: ADHD and Pediatric Mental Health (illustrated ed.). Harvard University Press. pp. 4–24
24. Kooij SJ, Bejerot S, Blackwell A, Caci H, Casas-Brugué M, Carpentier PJ, et al. (September 2010). "European consensus statement on diagnosis and treatment of adult ADHD: The European Network Adult ADHD"
25. Bálint S, Czobor P, Mészáros A, Simon V, Bitter I (2008). "[Neuropsychological impairments in adult attention deficit hyperactivity disorder: a literature review]" [Neuropsychological impairments in adult attention deficit hyperactivity disorder: A literature review]. Psychiatria Hungarica (in Hungarian)
26. Ginsberg Y, Quintero J, Anand E, Casillas M, Upadhyaya HP (2014). "Underdiagnosis of attention-deficit/hyperactivity disorder in adult patients: a review of the literature". The Primary Care Companion for CNS Disorders.
27. Ruiz-Goikoetxea M, Cortese S, Aznarez-Sanado M, Magallón S, Alvarez Zallo N, Luis EO, de Castro-Manglano P, Soutullo C, Arrondo G (January 2018). "Risk of unintentional injuries in children and adolescents with ADHD and the impact of ADHD medications: A systematic review and meta-analysis". Neuroscience and Biobehavioral Reviews.
28. Königs A, Kiliaan AJ (July 2016). "Critical appraisal of omega-3 fatty acids in attention-deficit/hyperactivity disorder treatment". Neuropsychiatric Disease and Treatment.
29. Shaw M, Hodgkins P, Caci H, Young S, Kahle J, Woods AG, Arnold LE (September 2012). "A systematic review and analysis of long-term outcomes in attention deficit hyperactivity disorder: effects of treatment and non-treatment".
30. Wilens TE, Spencer TJ (September 2010). "Understanding attention-deficit/hyperactivity disorder from childhood to adulthood".
31. Modesto-Lowe V, Chaplin M, Soovajian V, Meyer A (July 2013). "Are motivation deficits underestimated in patients with ADHD? A review of the literature"
32. Malenka RC, Nestler EJ, Hyman SE (2009). "Chapters 10 and 13". In Sydor A, Brown RY. Molecular Neuropharmacology: A Foundation for Clinical Neuroscience (2nd ed.). New York: McGraw-Hill Medical. pp. 266, 315, 318–323.
33. Kratochvil CJ, Vaughan BS, Barker A, Corr L, Wheeler A, Madaan V (March 2009). "Review of pediatric attention deficit/hyperactivity disorder for the general psychiatrist". The Psychiatric Clinics of North America.
34. National Collaborating Centre for Mental Health (2009). Attention Deficit Hyperactivity Disorder: Diagnosis and Management of ADHD in Children, Young People and Adults
35. Arns M, de Ridder S, Strehl U, Breteler M, Coenen A (July 2009). "Efficacy of neurofeedback treatment in ADHD: the effects on inattention, impulsivity and hyperactivity: a meta-analysis".
36. Bjornstad G, Montgomery P (April 2005). Bjornstad GJ, ed. "Family therapy for attention-deficit disorder or attention-deficit/hyperactivity disorder in children and adolescents". The Cochrane Database of Systematic Reviews
37. Wigal SB (2009). "Efficacy and safety limitations of attention-deficit hyperactivity disorder pharmacotherapy in children and adults"
38. Mayes R, Bagwell C, Erkulwater J (2008). "ADHD and the rise in stimulant use among children". Harvard Review of Psychiatry.
39. Ruiz-Goikoetxea M, Cortese S, Aznarez-Sanado M, Magallón S, Alvarez Zallo N, Luis EO, de Castro-Manglano P, Soutullo C, Arrondo G (January 2018). "Risk of

unintentional injuries in children and adolescents with ADHD and the impact of ADHD medications: A systematic review and meta-analysis".
40. Nigg JT, Lewis K, Edinger T, Falk M (January 2012). "Meta-analysis of attention-deficit/hyperactivity disorder or attention-deficit/hyperactivity disorder symptoms, restriction diet, and synthetic food color additives".
41. Sonuga-Barke EJ, Brandeis D, Cortese S, Daley D, Ferrin M, Holtmann M, Stevenson J, Danckaerts M, van der Oord S, Döpfner M, Dittmann RW, Simonoff E, Zuddas A, Banaschewski T, Buitelaar J, Coghill D, Hollis C, Konofal E, Lecendreux M, Wong IC, Sergeant J (March 2013).
42. Stern 1914, pp. 48–58 (1912 original German edition by Stern); 70–84 (1914 English translation by Whipple)
43. Glossary of Important Assessment and Measurement Terms. Philadelphia, PA: National Council on Measurement in Education. 2016. intelligence quotient (IQ).
44. Flanagan & Harrison 2012, chapters 8–13, 15–16 (discussing Wechsler, Stanford-Binet, Kaufman, Woodcock-Johnson, DAS, CAS, and RIAS tests.
45. Neisser, Ulrich; Boodoo, Gwyneth; Bouchard, Thomas J.; Boykin, A. Wade; Brody, Nathan; Ceci, Stephen J.; Halpern, Diane F.; Loehlin, John C.; Perloff, Robert; Sternberg, Robert J.; Urbina, Susana (1996).
46. Flynn, James R. (2009). What Is Intelligence: Beyond the Flynn Effect (expanded paperback ed.). Cambridge: Cambridge University Press
47. Kaufman, Alan S.; Lichtenberger, Elizabeth (2006). Assessing Adolescent and Adult Intelligence (3rd ed.). Hoboken (NJ): John Wiley & Sons.
48. Mara L. Cordeiro, Antonio C. Farias, Alexandre Cunha, Cassia R. Benko, Lucilene G. Farias, Maria T. Costa, Leandra F. Martins and James T. McCracken 2010 :Co-Occurrence of ADHD and High IQ: A Case Series Empirical Study. In Brazil.
49. J. Kuntsi,1 T.C. Eley,1 A. Taylor,1 C. Hughes,2 P. Asherson,1 A. Caspi,1 and T.E. Moffitt1* 1Social, Genetic and Developmental Psychiatry Centre, Institute of Psychiatry, King's College London, London, United Kingdom 2Centre for Family Research, University of Cambridge, Cambridge, United Kingdom: Co-Occurrence of ADHD and Low IQ Has Genetic Origins.
50. Jens Richardt M. Jepsen Birgitte Fagerlund Copenhagen University Hospital Erik Lykke Mortensen University of Copenhagen 2009: Do Attention Deficits Influence IQ Assessment in Children and Adolescents With ADHD?.
51. Ana Luiza Vidal Milioni1, Tiffany Moukbel Chaim1, Mikael Cavallet1, Nathalya Moleda de Oliveira2, Marco Annes3, Bernardo dos Santos1, Mario Louzã1, Maria Aparecida da Silva1, Carmen Silvia Miguel1, Mauricio Henriques Serpa1, Marcus V. Zanetti1, Geraldo Busatto1, and Paulo Jannuzzi Cunha1,2014: High IQ May "Mask" the Diagnosis of ADHD by Compensating for Deficits in Executive Functions in Treatment-Naïve Adults With ADHD.
52. American Psychiatric Association (2013). Diagnostic and Statistical Manual of Mental Disorders (5th ed.)
53. Goodenough, F. (1926). Measurement of intelligence by drawings. New York: World Book Co
54. Antshel, K. M., Faraone, S. V., Maglione, K., Doyle, A. E., Fried, R., Seidman, L. J., & Biederman, J. (2009). Is adult attention deficit hyperactivity disorder a valid diagnosis in the presence of high IQ? Psychological Medicine, 39, 1325-1335.
55. (Webb & Latimer, 1993ERIC Clearinghouse on Disabilities and Gifted Education Reston VA{ADHD and Children Who Are Gifted.}).
56. Cramond, B. (1994). Attention-deficit hyperactivity disorder and creativity- What is the connection? The Journal of Creative Behavior, 28(3), 193-210
57. Webb, J. T., & Latimer, D. (1993). ADHD and children who are gifted. Exceptional Children, 60, 183-184.

58. Antshel, K. M., Faraone, S. V., Maglione, K., Doyle, A., Fried, R., Seidman, L., & Biederman, J. (2009). Is adult attention deficit hyperactivity disorder a valid diagnosis in the presence of high IQ? Psychological Medicine, 39, 1325-1335.
59. McCracken, J. (1998). Textbook of pediatric neuropsychiatry. Washington, DC: American Psychiatric Association Press.
60. Antshel, K. M., Faraone, S. V., Maglione, K., Doyle, A., Fried, R., Seidman, L., & Biederman, J. (2008). Temporal stability of ADHD in the high-IQ population: Results from the MGH longitudinal family studies of ADHD. Journal of the American Academy of Child and Adolescent Psychiatry, 47, 817-825.
61. Brown, T. E., Reichel, P. C., & Quinlan, D. M. (2009). Executive function impairments in high IQ adults with ADHD. Journal of Atttention Disorders, 13, 161-167
62. Frazier, T. W., Demaree, H. A., & Youngstrom, E. A. (2004). Meta-analysis of intellectual and neuropsychological test performance in attention-deficit/hyperactivity disorder. Neuropsychology, 18, 543-555.
63. Sharp, W. S., Gottesman, R. F., Greenstein, D. K., Ebens, C. L., Rapoport, J. L., & Castellanos, F. X. (2003). Monozygotic twins discordant for attention-deficit/hyperactivity disorder: Ascertainment and clinical characteristics. Journal of the American Academy of Child and Adolescent Psychiatry, 42, 93-97.
64. Sharp, W. S., Gottesman, R. F., Greenstein, D. K., Ebens, C. L., Rapoport, J. L., & Castellanos, F. X. (2003). Monozygotic twins discordant for attention-deficit/hyperactivity disorder: Ascertainment and clinical characteristics. Journal of the American Academy of Child and Adolescent Psychiatry, 42, 93-97.
65. Schuck, S. E., & Crinella, F. M. (2005). Why children with ADHD do not have low IQs. Journal of Learning Disabilities, 38, 262-280.
66. Crinella, F. M., & Yu, J. (2000). Brain mechanisms and intelligence. Psychometric g and executive function. Intelligence, 27, 299-327.
67. Aylward, G. P., Gordon, M., & Verhulst, S. J. (1997). Relationships between continuous performance task scores and other cognitive measures: Causality or commonality? Assessment, 4, 325-336.
68. Jensen, A. R. (1998). The g factor. The science of mental ability. Westport, CT: Praeger.
69. Barkley, R. A. (1977). A review of stimulant drug research with hyperactive children. Journal of Child Psychology and Psychiatry, 18, 137-165.
70. Crinella, F. M., & Yu, J. (2000). Brain mechanisms and intelligence. Psychometric g and executive function. Intelligence, 27, 299-327
71. McGough, J. J., Smalley, S. L., McCracken, J. T., Yang, M., Del'Homme, M., Lynn, D. E., & Loo, S. (2005). Psychiatric comorbidity in adult attention deficit hyperactivity disorder: Findings from multiplex families. American Journal of Psychiatry, 162, 1621-1627
72. Davis SM, Katusic SK, Barbaresi WJ, et al. Epilepsy in children with attention-deficit/hyperactivity disorder. Pediatr Neurol. 2010;42(5):325–330. doi:10.1016/j.pediatrneurol.2010.01.005
73. Instanes JT, Klungsøyr K, Halmøy A, Fasmer OB, Haavik J (February 2018). "Adult ADHD and Comorbid Somatic Disease: A Systematic Literature Review". Journal of Attention Disorders (Systematic Review).
74. Ertürk E, Wouters S, Imerai L, Lampo A (January 2016). "Association of ADHD and Celiac Disease: What Is the Evidence? A Systematic Review of the Literature". Journal of Attention Disorders (Review): 108705471561149.
75. Lardner, C. (2005). School Counselors Light-Up the Intra-and Inter-Personal Worlds of Our Gifted.[Electronic version] Michigan Alliance for the Gifted and Talented .
76. Chhabildas NA, Pennington BF, Willcutt EG. 2001. A comparison of the cognitive deficits in the DSM-IV subtypes of ADHD. J Abnorm Child Psychol 29:529–540.
77. Burt SA (July 2009). "Rethinking environmental contributions to child and adolescent psychopathology: a meta-analysis of shared environmental influences". Psychological Bulletin. 135 (4): 608–37.

78. Nolen-Hoeksema S (2013). Abnormal Psychology (Sixth ed.). p. 267
79. Franke B, Faraone SV, Asherson P, Buitelaar J, Bau CH, Ramos-Quiroga JA, et al. (October 2012). "The genetics of attention deficit/hyperactivity disorder in adults, a review". Molecular Psychiatry. 17 (10): 960–87.
80. Burger PH, Goecke TW, Fasching PA, Moll G, Heinrich H, Beckmann MW, Kornhuber J (September 2011). "[How does maternal alcohol consumption during pregnancy affect the development of attention deficit/hyperactivity syndrome in the child]". Fortschritte der Neurologie-Psychiatrie (Review) (in German). 79 (9): 500–6.
81. Thapar A, Cooper M, Jefferies R, Stergiakouli E (March 2012). "What causes attention deficit hyperactivity disorder?". Archives of Disease in Childhood (Review. Research Support, Non-U.S. Gov't). 97 (3): 260–5.
82. Emond V, Joyal C, Poissant H (April 2009). "[Structural and functional neuroanatomy of attention-deficit hyperactivity disorder (ADHD)]" [Structural and functional neuroanatomy of attention-deficit hyperactivity disorder (ADHD)]. L'Encephale (in French). 35 (2): 107–14.
83. Nina Rohrer-Baumgartner, Pål Zeiner, Jens Egeland, Kristin Gustavson, Annette Holth Skogan, Ted Reichborn-Kjennerud and Heidi Aas. 1 May 2014:{ Does IQ influence Associations between ADHD Symptoms and other Cognitive Functions in young Preschoolers?} in Norway .
84. Watemberg, Waiserberg, Zuk and Lerman-Sagie (2007):{ Developmental coordination disorder in children with attention-deficit–hyperactivity disorder and physical therapy intervention} in UK.
85. McGrath, Lauren M.; Hutaff-Lee, Christa; Scott, Ashley; Boada, Richard; Shriberg, Lawrence D.; Pennington, Bruce F.Journal of Abnormal Child Psychology, v36 n2 p151-163 Feb 2008{ Children with Comorbid Speech Sound Disorder and Specific Language Impairment Are at Increased Risk for Attention-Deficit/Hyperactivity Disorder}
86. Adela Masana Marín, , Inti Ney, , Inti Ney, July 23, 2012, Child and Adolescent Mental Health Centers. Pere Mata Group, IISP, Universitat Rovira i Virgili, Spain{ Do Firstborn Children Have an Increased Risk of ADHD?} in Spain.
87. Lowe, N., Kirley, A., Hawi, Z., Sham, P., Wickham, H., Kratochvil, C. J., . . . Gill, M. (2004). Joint analysis of the DRD5 marker concludes association with attention-deficit/ hyperactivity disorder confined to the predominantly inattentive and combined subtypes. American Journal of Human Genetics, 74, 348-356.

Appendics

Table (1): Diagnostic Criteria forAttention-Deficit/Hyperactivity DisorderAccording to the Text Revision of the Fourth Edition of the Diagnostic and Statistical Manual of Mental Disorders.[5]

A. Either (1) or (2):

1. six (or more)ofthe following symptoms ofinattention have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level: Inattention
    a. often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
    b. often has difficulty sustaining attention in tasks or play activities
    c. often does not seem to listen when spoken to directly
    d. often doesnotfollow through on instructionsand failsto finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)
    e. often has difficulty organizing tasks and activities
    f. often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
    g. often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)
    h. is often easily distracted by extraneous stimuli
    i. is often forgetful in daily activities
2. six (or more) ofthe following symptoms ofhyperactivity impulsivity have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

    Hyperactivity
    a) often fidgets with hands or feet or squirms in seat
    b) often leaves seat in classroom or in other situations in which remaining seated is expected
    c) often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings ofrestlessness)
    d) often has difficulty playing or engaging in leisure activities quietly
    e) is often “on the go” or often acts as if“driven by a motor”
    f) often talks excessively

    Impulsivity
    a) often blurts out answers before questions have been completed
    b) often has difficulty awaiting turn
    c) often interrupts or intrudes on others (e.g., butts into conversations or games)

B. Some hyperactive impulsive or inattentive symptoms that caused impairment were present before age 7 years.

C. Some impairment from the symptoms is present in two or more settings (e.g., at school [or work] and at home).

D. There must be clear evidence ofclinically significant impairment in social, academic, or occupational functioning.

E. The symptoms do not occur exclusively during the course ofa pervasive developmental disorder, schizophrenia, or other psychotic disorder and are not better accounted for by another mental disorder (e.g., mood disorder, anxiety disorder, dissociative disorder, or a personalitydisorder).

Code based on type:

Attention-Deficit/Hyperactivity Disorder, Combined Type:Ifboth Criteria A1 and A2 are met for the past 6 months.

Attention-Deficit/Hyperactivity Disorder, Predominantly Inattentive Type:IfCriterion A1 is met but Criterion A2 is not met for the past 6 months.

Attention-Deficit/Hyperactivity Disorder, Predominantly Hyperactive-Impulsive Type:IfCriterion A2 ismet but Criterion A1 is not met for the past 6 months.

Table (2): show the IQ classification scoring system according to Goodenough drawing test.[53]

Iq score	classification
<80	Below
80-100	Average
100-140	Superior
>40	Genus

Appendix(1): sociodemographic data.

استبيان تشخيص حالات فرط الحركة ونقص الانتباه لدى الأطفال

بيانات عامة:

1_اسم الطفل :

2_العمر :

3_الجنس :

4_المستوى التعليمي :

معلومات عن الاسرة :

1_عمر الاب :

2_عمل الاب :

3_المستوى التعليمي للاب :

4_امراض الاب :

5_عمر الام :

6_عمل الام :

7_المستوى التعليمي للام :

8_امراض الام :

9_عدد الاخوة و الاخوات و ترتيب الطفل بين اخوانه :

10_اعمار الاخوه :

11_المستوى التعليمي للاخوه :

12_امراض الاخوه :

13_هل يعيش الوالدان معا (في حالة الاجابه بلا يرجى معرفة السبب)

14_دخل الاسرة و الوضع الاقتصادي و السكن :

15_هل عانى الطفل من حرمان عاطفي من الام :

16_ما هي اهم المشكلات الاسرية :

معلومات عن ظروف الحمل و الولادة :

1_ظروف الحمل (هل كان الحمل طبيعيا) :

2_عمر الام اثناء الحمل :

3_امراض الام و الاصابات اثناء الحمل :

4_العلاجات و العقاقير التي تتناولها الام اثناء الحمل :

5_مدة الحمل :

6_عملية الولادة (طبيعية , قيصرية , عسرة , قبل الاوان)

7_الحاله الصحيه للطفل بعد الولاده (الوزن , الطول)

نمو الطفل بعد الولادة :

1_الرضاعه (طبيعيه ,اصطناعيه ,مختلطه ,مدة الرضاعه)

2_التسنين :

3_المشي :

4_النطق و الكلام :

صحة الطفل :

1_وجود عاهات او اعاقات او امراض خلقية :

2_التحكم في عملية التبرز :

3_التحكم في عملية التبول :

4_اصابات عضوية مثل (حميات,اسهالات متكرره,التهاب سحايا,امراض حساسيه,حصبه,جدري,نكاف,شلل اطفال,سعال ديكي,التهاب كبد وبائي,حمى قرمزيه, تدرن رئوي,طفيليات معويه,امراض قلب,امراض صدر,صرع,اورام,يرقان,...)

5_اضطرابات نفسية سلوكية (خوف,قلق,اكتئاب,عدوان,كذب,بكاء,عناد,هروب,اكل الاضافر,مص اصابع,سرقة,اضطراب في الطعام,اضطراب في النوم,احلام يقظة,...)

6 _العلاجات السابقه :

المستوى الاكاديمي و العقلي :

1_مستوى التحصيل الدراسي العام (عادي ,دون الوسط ,ضعيف)

2_مستوى الطفل في مواد القرائه و الكتابة و الحساب (عادي ,دون الوسط ,ضعيف)

3_التواصل اللغوي :

4_التواصل الاجتماعي و الصداقات و الالعاب :

5_الانشطه الفنية و الرياضية للطفل :

6_مستوى القدرة العقلية لدى الطفل(IQ) (عادي ,دون الوسط ,ضعيف)

Appendix (2): **Conners' Questionnaire short version.**[5]

الاعراض	لا يوجد 0	قليل 1	غالبا 2	دائما 3
1.مفرط النشاط و الحركه				
2.سريع الاثاره, مندفع و متهور				
3.يزعج الاطفال الاخرين				
4.غير قادر على اكمال ما بدأه (من درس او لعب)				
5.لا يستطيع الجلوس فتره معقوله, كثير العبث				
6.عديم الانتباه, كثير الشرود				
7.يجب تنفيذ طلباته في الحال (عديم الصبر)				
8.يبكي بسرعه وسهوله دون سبب حقيقي				
9.سرعة تغير المزاج جذريا, سريع الغضب و الخيبه				
10.سرعة الانفجار والتصرف غير المتوقع				
المجموع (لكل عمود)				
المجموع الكلي للاستبيان				

Appendix (3): Goodenough-Harris Drawing Test [53]

١- الرأس: أي محاولة لإظهار الرأس حتى ولو كان خاليا من ملامح الوجه و لا تحسب ملامح الوجه إذا لم تكن هناك خطوط للرأس.

٢-الساقين: أي محاولة لإظهار الساقين بعددهما الصحيح، باستثناء الحالة التي يكون فيها الرسم جانبيا حيث تظهر في هذه الحالة رجل واحدة.

٣- الذراعين: أي محاولة لإظهار الذراعين بعددهما الصحيح، باستثناء الحالة التي يكون فيها الرسم جانبيا حيث تظهر في هذه الحالة ذراع واحدة و لا يعطى الطفل نقطة على رسمه للأصابع ملتصقة بالجذع مباشرة.

٤- الجذع: أي محاولة لإظهار الجذع حتى لو كانت برسم خط وفي حال كان الجذع ملتصق بالرأس لا بعتبر رقبة بل يحسب جذع.

٥- طول الجذع أكبر من عرضه: يقاسان بالمليمتر إذا تطلب الأمر في هذه الحالة يجب أن لا يكون الرسم عبارة عن خط.

٦- ظهور الأكتاف: تصحح هذه النقطة بدقة وصرامة فيجب أن تكون هناك أكتاف واضحة و لا تحتسب الزوايا القائمة أكنافا.

٧- اتصال الذراعين والساقين بالجذع مهما كان نوع السيقان و الأذرع المرسومة وعددها فإن التصاقها بالجذع يمنح الطفل نقطة.

٨- اتصال الذراعين و الساقين في الاماكن الصحيحة:في حالة الرسم الجانبي يجب أن يكون الذراع ملتصقا بمنتصف الجذع تحت الرقبة

٩- وجود الرقبة: أي شكل مختلف عن الجذع والرأس يتوسطهما يعتبر رقبة.

١٠- خطوط الرقبة يتماشى مع الرأس أو الجذع أو كلاهما: أي أن تكون متدرجة الاتساع.

١١- وجود العينين: أغلب أشكال العينين عند الأطفال تكون غريبة و لكن أي محاولة لإظهارهما تعطي نقطة، و ينقط الطفل في حال الرسم الجانبي على العين الواحدة.

١٢ وجدود الأنف: أي محاولة لإظهار الأنف تحسب

١٣- وجود الفم: أي محاولة لاضهار وجود الفم

١٤- رسم الفم والأنف من بعدين أي أن لا يكونا مجرد خط، و لا يقبل الشكل المستدير أو المربع أو المستطيل للأنف

و يشترط رسم خط لفصل الشفتين كي يمنح الطفل نقطة.

١٥- إظهار فتحني الأنف: أي محاولة لإظهارهما تقبل

١٦- وجود الشعر: إي محاولة لإظهار الشعر تقبل.

١٧- وجود الشعر في المكان الصحيح: يجب إن يكون في المكان الصحيح من الرأس وان لا يكون شفافا.

١٨- وجود الملابس: أي محاولة لإظهار الملابس تقبل.

١٩- وجود قطعتين من الملابس: ويشترط إن لا نكون الملابس شفافة تظهر ما تحتها، و ينقط الطفل في حال رسم الثوب التقليدي.

٢٠- خلو الملابس من القطع الشفافة: تصحح هذه النقطة بدقة فيحب أن تكون الثياب ساترة لما تحتها تماما فالا يجوز أن يبدو الساق تحت البنطلون مثلا أو الجسم تحت الجبة، و يجب وجود الأكمام.

٢١- وجود 4 قطع من الملابس/ نعطى هذه النقطة مباشرة للطفل الذي يرسم الرجل مرتديا الجبة والغطاء الرأس أما في الحالة العادية فيجب أن تتوفر 4 قطع فعلا مثل البنطلون و القبعة والسترة و الحذاء و ربطة العنق الحزام أو حمالات البنطلون.....

٢٢- تكامل الزي: يجب أن يكون الزي متكاملا وواضحا ومعروفا فلا يعطى الطفل النقطة إذا رسم زيا عاديا مع قبعة شرطي مثلا.

٢٣- وجود الأصابع : أي محاولة لإظهار الأصابع تحسب.

٢٤- صحة عدد الأصابع.

٢٥- صحة تفاصيل الأصابع: الطول أكبر من العرض+ أن تكون من تعدين وليست خطوط+ أن لا تزيد الزاوية التي تحتلها عن 170 0

٢٦- صحة رسم الإبهام: تصحح هذه النقطة بتشدد فلا يعطى الطفل نقطة إلا إذا كان الإبهام أقصر من بقية الأصابع المسافة بين الإيهام والسبابة أكبر من المسافة بين بقية الأصابع.

٢٧- إظهار راحة اليد: يجب أن تكون بادية.

لوحظ أن بعض الأطفال يرسمون اليدين داخل الجيب في هذه الحالة يعطى الطفل نقطة على كل العناصر السابقة المتعلقة باليدين.

٢٨-إظهار مفصل الذراع: مفصل الكتف أو الكوع أو كلاهما أو كلاهما.

٢٩- إظهار مفصل الساق: مفصل الركبة أو ثنية الفخذ، يظهر في بعض الرسومات ضمور في مكان الركبة يقبل ذلك و يحسب نقطة.

٣٠- تناسب الرأس: أن لا تكون مساحة الرأس أكبر من نصف مساحة الجذع أو أقل من عشر مساحته.

٣١- تناسب الذراعين: أن تكون الذراعان في طول الجذع أو أكثر قليلا، و أنا يكون طول الذراعان أكبر من عرضهما.

٣٢- تناسب الساقين: طول الساقين أقل من طول الجذع و عرضهما اقل من عرض الجذع.

٣٣- تناسب القدمان: يجب أن يكون الرسم من بعدين (ليس خط) و يجب أن لا يكون طول القدم اكبر من ارتفاعها، و طول القدم لا يتجاوز ثلث الساق و لا يقل عن عشرها.

٣٤- إظهار الذراعان والساقان من بعدين: (ليسا خطوط(

٣٥- إظهار الكعب: أي محاولة لإظهاره تحسب نقطة

٣٦- التوافق الحركي للرسم بصفة عامة: وضوح خطوط الرسم و تلاقيها بدقة دون كثرة في الفراغات بينها، و تصحح بشيء من التساهل(عام).

٣٧-التوافق الحركي لخطوط الرسم (دقيق).

٣٨- التوافق الحركي لخطوط الذراعين والساقين: نفس الشروط السابقة

٣٩- بعاد تصحيح نفس النقطة السابقة و لكن بدقة أكبر و يراعى تدرج تلاقي خطوط الرسم.

٤٠- توافق خطوط الرأس: تصحح هذه النقطة بدقة يلزم أن تكون كل خطوط الرأس موجهة و أن يشبه شكل الرأس الشكل الطبيعي.

٤١- التوافق الحركي لخطوط الجذع: مراعاة ما سبق.

٤٢- التوافق الحركي لخطوط ملامح الوجه: رسم الفم و الأنف و العينين من بعدين

و أن تكون الأعضاء في أماكنها الصحيحة و التناسق الحجمي للأعضاء مهم أيضا.

٤٣-وجود الأذنين: أي محاولة لإظهار الأذنين تحسب.

٤٤-إظهار الأذنين في مكانهما الصحيح و بطريقة مناسبة أي أن يكون الرسم مشابها للأذن.

٤٥- إظهار تفاصيل العين من رمش وحاجب.

٤٦- إظهار إنسان العين (البؤبؤ(

٤٧- إظهار اتجاه النظر

٤٨- إظهار الذقن والجبهة: أي مساحة فوق العينين تحسب جبهة و أي مساحة تحت الفم تحسب ذقن.

٤٩- إظهار بروز الذقن.

٥٠- الرسم الجانبي الصحيح (الرأس و القدمان و الجذع بشكل صحيح(

٥١- الرسم الجانبي الخالي من الأخطاء ما عدا أخطاء العين.