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Knowledge & Misconceptions about ADHD among Female Primary School Teachers in Aseer, Saudi Arabia

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Abstract

Background: Attention deficit/ hyperactivity disorder (ADHD) defined as physical movements which exceed the normal limit or the acceptable limit, and it shows in the form of a group of behavioral disorders arise as a result of many psychological and organic causes. Hyperactivity includes random, involuntary and unsuitable movements appear as a result of organic or psychological causes, and it is accompanied with an attention deficit. The Ministry of Health in the United States showed that males are more susceptible to this disorder than females four times. Despite the importance of the teacher's knowledge in the symptoms of the ADHD and the ways to deal with it; a small number of previous studies have examined this area. Past studies have shown that teachers did not have enough knowledge of ADHD and they often have fundamental misperceptions about the nature, causes and results of ADHD. **Objective:** to reveal the level of **the teachers' knowledge & misconceptions about ADHD among primary school female teachers in Aseer, Saudi Arabia. Methods:** This is a descriptive research using self-reported questionnaire method. It is quantitative in nature. It was done on randomly selected Saudi females teachers of primary schools in Aseer region. **Results:** Nearly twenty eight (27.6%) of the teachers responded correctly, while (36.5%) responded incorrectly, and (35.9%) responded “don’t know” to the first subscale which include 15 items assessing general knowledge about the nature, causes and outcome of ADHD. Fifty nine and three-tenth percent (59.3%) of the teachers responded correctly, while (17.7%) responded incorrectly, and (23%) responded “don’t know” to the second subscale of KADDS which include 9 items assessing symptoms/diagnosis of ADHD. Thirty three and two-tenth percent (33.2%) of the teachers responded correctly, while (24.5%) responded incorrectly, and (42.3%) responded “don’t know” to the third subscale of KADDS which include 12 items assessing the treatment of ADHD. **Conclusion:** Teachers have a major role in the identification and assessment of students with ADHD. This study was intended to examine teachers’ knowledge and misperceptions of ADHD. Teachers’ scores on KADDS were fairly good, pointing to relatively lack of knowledge about ADHD. Moreover, teachers’ level of knowledge of ADHD was positively related to their prior training and experience with ADHD. Results from this study concur with the findings of previous studies.

Introduction

Attention deficit/ hyperactivity disorder (ADHD) defined as physical movements which exceed the normal limit or the acceptable limit, and it shows in the form of a group of behavioral disorders arise as a result of many psychological and organic causes (Oim, 2004). Hyperactivity includes random, involuntary and unsuitable movements appear as a result of organic or psychological causes, and it is accompanied with an attention deficit (Munshi, 2014).

The Ministry of Health in the United States showed that males are more susceptible to this disorder than females four times, and the child who suffers from this disorder is recognized between the age of five to nine years, where these symptoms will continue until adolescence, and in 30-60% of cases, the symptoms may last up to adulthood (Oim, 2004). In this area, the American Psychiatric Association (APA) indicated that ADHD is one of the most disturbances suffered by the children, where the prevalence rates are ranges between 3-7% of the total number of children in pre-school age (APA, 2000). In other statistics conducted in 2004, 6 to 9% of school students suffer from ADHD (the American Academy of Pediatrics (AAP, 2004).According to Oim (2004); DuPaul & Weyandt (2006); Goldstein et al., (2011) the high ratios of students who suffer from this disorder, have confirmed that in each classroom there will be at least one child suffering from ADHD.

Selikowitz (2004) pointed that ADHD is accompanied with range of symptoms, such as difficulty in maintaining focus, frequent forgetfulness, lack of attention to detail, and making errors due to negligence. Curtis et al. (2006) added that these children avoid doing their homework, cannot afford to follow the instructions, and they lose their own things constantly. Goldstein et al. (2011) indicated to other symptoms, such as the rush to answer, the province of others, also he indicated that these children talk a lot and move a lot.

Although the mental abilities of the children with ADHD are not law; these children may fail in the school. Tannock (2007) clarified that students with ADHD showed bad and low academic performance on reading and math levels with the possibility of their failure at the secondary level. Oim (2004) indicated that teachers can deal with ADHD and alleviate its symptoms in order to help the child to learn and restraint, leading to increase the self-confidence of the child. The school has a great role in helping the child with ADHD, where the teacher may be the first to pay attention to the symptoms of this disorder. The teacher's knowledge in this disorder may change a lot in a child's life, where the role of the teacher is considered essential from the first stages. Given the problems and symptoms suffered by students with ADHD, teachers may find difficulties in dealing with them, and the effort which the teacher is expected to give must be great, and therefore, teachers may find that dealing with these students represent a difficult process (DuPaul & Stoner, 2003). Curtis et al. (2006) pointed out that teachers are the most effective element in diagnosing the students who suffer from ADHD, and they can discover their symptoms in an early time as a result the continuous communication between the teacher and the student.

Despite the importance of the teacher's knowledge in the symptoms of the ADHD and the ways to deal with it; a small number of previous studies have examined this area. Past studies have shown that teachers did not have enough knowledge of ADHD and they often have fundamental misperceptions about the nature, causes and results of ADHD (Bussing et al., 2002; Barkley, 2006; Alkahtani, 2013; Munshi, 2014), where teachers have

clarified that they did not have received enough training regarding dealing with ADHD (Alkahtani, 2013). The researcher noticed that there is no enough studies investigated the teachers' knowledge and misperception of ADHD in the Arab world in general and specially at the Saudi Arabia, where this study will attempt to fill the existed gab in the previous studies. The current study aims to reveal the level of **the teachers' knowledge & misconceptions about ADHD among primary school teachers in Aseer, Saudi Arabia.** The problem of the current study can be summarized in the following questions:

1. What is the teachers' level of knowledge of the symptoms of ADHD?
2. What is the teachers' level of knowledge of the treatments of ADHD?
3. What is the relation between the teachers' level of knowledge of the symptoms and treatments of ADHD and their prior training and experience with ADHD?

Method:

This is a descriptive research using self-reported questionnaire method. It is quantitative in nature. It done on randomly selected Saudi females teachers of primary schools in Aseer region.

Procedure

The Arabic version of "The Knowledge of Attention Deficit Disorders Scale" (KADDS) was obtained from Dr. Keetam Alkahtani who granted her permission for the use of KADDS in this research. The survey was distributed electronically, using Google Drive service. The schools selected randomly by publishing the e-questionnaires among teachers by assistance of some of The Ministry of Education's workers that responsible for the schools in Aseer region. An introduction message was included, introducing the research team and explaining the study in brief and clarify that the participants has the choice to agree or disagree, and all information will be highly confidential. We get 295 useable questionnaires from female teacher.

Data Collection

The Knowledge of Attention Deficit Disorders Scale (KADDS) and a demographic questionnaire were used to collect data from two hundred and ninety-five (295) teachers. The KADDS is a 36-item rating scale developed by Sciutto and colleagues (Sciutto et al., 2000) to measure teachers' knowledge and misperceptions of Attention-Deficit/Hyperactivity Disorder. Items in the KADDS Q are with three options: true (T), false (F) or don't know (DK). These items divided into three specific areas:

1. symptoms/diagnosis of ADHD (9 items),
2. the treatment of ADHD (12 items),
3. general knowledge about the nature, causes and outcome of ADHD (15 items).

Internal consistency of the KADDS total score, in previous studies, has ranged from 0.82 to 0.89 (Herbert et al., 2004; Sciutto et al., 2000; Soroa et al., 2013). Cronbach's alpha value for the current study was 0.76 which indicate an adequate internal consistency and for that the KADDS is considered to be "one of the most widely used instruments to assess the level of knowledge of teachers regarding ADHD, and is the first instrument whose

indices of reliability and validity were published in this field" (Soroa et al., 2013: p. 156).

Result

Table 1: The demographic characteristics of the participants (n = 295).

	N	%
Age		
20 -30 years	24	8.1
31-40 years	181	61.4
41-50 years	85	28.8
More than 50 years	5	1.7
Educational Level		
Bachelor degree.	283	95.9
Master degree.	12	4.1
Educational Role		
General education teacher.	283	95.9
Special education teacher.	12	4.1
Experience years		
1-5 years	53	18.0
5-10 years	56	19.0
11-15 years	49	16.6
16-20 years	59	20.0
More than 20 years	78	26.4

Items	CA	Number of responses		
		Correct	Incorrect	Don't know
1. Most estimates suggest that ADHD occurs in approximately 15% of school age children.	F	191 (64.7%)	21 (7.1%)	83 (28.1%)
4. ADHD children are typically more compliant with their fathers than with their mothers.	T	76 (25.8%)	79 (26.8%)	140 (47.5%)
6. ADHD is more common in the 1st degree biological relatives (i.e. mother, father) of children with ADHD than in the general population.	T	69 (23.4%)	79 (26.8%)	147 (49.8%)
13. It is possible for an adult to be diagnosed with ADHD.	T	99 (33.6%)	40 (13.6%)	156 (52.9%)
17. Symptoms of depression are found more frequently in ADHD children than in non-ADHD children.	T	124 (42.0%)	33 (11.2%)	138 (46.8%)
19. Most ADHD children "outgrow" their symptoms by the onset of puberty and subsequently function normally in adulthood.	F	131 (44.4%)	32 (10.8%)	132 (44.7%)
22. If an ADHD child is able to demonstrate sustained attention to video games or TV for over an hour, that child is also able to sustain attention for at least an hour of class or homework.	F	160 (54.2%)	61 (20.7%)	74 (25.1%)
24. A diagnosis of ADHD by itself makes a child eligible for placement in special education.	F	187 (63.4%)	29 (9.8%	79 (26.8%)
27. ADHD children generally experience more problems in novel situations than in familiar situations.	F	205 (69.5%)	22 (7.5%)	68) (23.1%)
28. There are specific physical features which can be identified by medical doctors (e.g. pediatrician) in making a definitive diagnosis of ADHD.	F	122 (41.4%)	41 (13.9%)	132 (44.7%)
29. In school age children, the prevalence of ADHD in males and females is equivalent.	F	84 (28.5%)	68 (23.1%)	143 (48.5%)
30. In very young children (less than 4 years old), the problem behaviors of ADHD children (e.g. hyperactivity, inattention) are distinctly different from age-appropriate behaviors of non-ADHD children.	F	187 (63.4%)	10 (3.4%)	98 (33.2%)
31. Children with ADHD are more distinguishable from normal children in a classroom setting than in a free play situation.	T	238 (80.7%)	18 (6.1%)	39 (13.2%)
32. The majority of ADHD children evidence some degree of poor school performance in the elementary school years.	T	182 (61.7%)	67 (22.7%)	46 (15.6%)
33. Symptoms of ADHD are often seen in non-ADHD children who come from inadequate and chaotic home environments.	T	148 (50.2%)	33 (11.2%)	114 (38.6%)

This table revealed that the majority of participant's age was (61.4% n= 181) ranged from 31-40 years old and the minority age was (1.7% n= 5) ranged from 51 years and older. Also, the educational level represent that (95.9% n= 283) have a bachelor degree and the minority (4.1% n= 12) have a master degree, as well as (95.9%

n= 283) of participants are general education teacher and (4.1% n= 12) of them are special education teacher. Regarding the experience years (26.4% n=78) of participant with a teaching experience more than 20 years and (18% n= 53) have experience ranged from one year to five years and the rest of participant (55.6% n=164) with an experience years varies in between.

Table 2 Participants' responses on the first subscale of KADDS which include 15 items pertain to general knowledge about the nature, causes and outcome of ADHD (*n* = 295).

This table revealed that the highest proportion of correct responses (80.7% n=238) and also the lowest incorrect responses (6.1% n=18) were on item 31, "Children with ADHD are more distinguishable from normal children in a classroom setting than in a free play situation. The lowest correct responses (23.4% n=69) and also the highest proportion of incorrect responses (26.8% n=79) were on item 6, "ADHD is more common in the 1st degree biological relatives (i.e. mother, father) of children with ADHD than in the general population". The majority of teachers (52.9% n=156) selected "Don't Know" option in response to item 13," It is possible for an adult to be diagnosed with ADHD.

Table 3 Participants' responses on the second subscale of KADDS which include 9 items pertain to symptoms/diagnosis of ADHD (n = 295).

Items	**CA**	**Number of responses**		
		Correct	Incorrect	Don't know
3. ADHD children are frequently distracted by extraneous stimuli.	T	247 (83.7%)	14 (4.7%)	34 (11.5%)
5. In order to be diagnosed with ADHD, the child's symptoms must have been present before age 7.	T	175 (59.3%)	49 (16.6%)	71 (24.1%)
7. One symptom of ADHD children is that they have been physically cruel to other people.	F	143 (48.5%)	74 (25.1%)	78 (26.4%)
9. ADHD children often fidget or squirm in their seats.	T	273 (92.5%)	4 (1.4%)	18 (6.1%)
11. It is common for ADHD children to have an inflated sense of self-esteem or grandiosity.	F	96 (32.5%)	65 (22.0%)	134 (45.4%)
14. ADHD children often have a history of stealing or destroying other people's things.	F	109 (36.9%)	73 (24.7%)	113 (38.3%)
16. Current wisdom about ADHD suggests two clusters of symptoms: One of inattention and another consisting of hyperactivity/impulsivity.	T	208 (70.5%)	18 (6.1%)	69 (23.4%)
21. In order to be diagnosed as ADHD, a child must exhibit relevant symptoms in two or more settings (e.g., home, school).	T	232 (78.6%)	17 (5.8%)	46 (15.6%)
26. ADHD children often have difficulties organizing tasks and activities.	T	228 (77.3%)	20 (6.8%)	47 (15.9%)

This table revealed that the highest proportion of correct responses (92.5% n=273) and also the lowest incorrect responses (1.4% n=4) were on item 9," ADHD children often fidget or squirm in their seats". The highest incorrect responses (25.1% n= 74) were on item 7," One symptom of ADHD children is that they have been

physically cruel to other people". The majority (45.5% n=134) of teachers responded "Don't Know" on item 11," It is common for ADHD children to have an inflated sense of self-esteem or grandiosity".

Table 4 Participants' responses on the third subscale of KADDS which include 12 items pertain to the treatment of ADHD (n = 295).

Items	**CA**	**Number of responses**		
		Correct	Incorrect	Don't know
2. Current research suggests that ADHD is largely the result of ineffective parenting skills.	F	88 (29.8%)	147 (49.8%)	60 (20.3%)
8. Antidepressant drugs have been effective in reducing symptoms for many ADHD children.	T	58 (19.7%)	48 (16.3%)	189 (64.1%)
10. Parent and teacher training in managing an ADHD child are generally effective when combined with medication treatment.	T	262 (88.8%)	5 (1.7%)	28 (9.5%)
12. When treatment of an ADHD child is terminated, it is rare for the child's symptoms to return.	F	40 (13.6%)	85 (28.8%)	170 (57.6%)
15. Side effects of stimulant drugs used for treatment of ADHD may include mild insomnia and appetite reduction.	T	104 (35.3%)	23 (7.8%)	168 (56.9%)
18. Individual psychotherapy is usually sufficient for the treatment of most ADHD children.	F	93 (31.5%)	90 (30.5%)	112 (38.0%)
20. In severe cases of ADHD, medication is often used before other behavior modification techniques are attempted.	T	114 (38.6%)	58 (19.7%)	123 (41.7%)
23. Reducing dietary intake of sugar or food additives is generally effective in reducing the symptoms of ADHD.	F	202 (68.5%)	23 (7.8%)	70 (23.7%)
25. Stimulant drugs are the most common type of drug used to treat children with ADHD.	T	41 (13.9%)	69 (23.4%)	185 (62.7%)
34. Behavioral/Psychological interventions for children with ADHD focus primarily on the child's problems with inattention.	F	164 (55.6%)	21 (7.1%)	110 (37.3%)
35. Electroconvulsive Therapy (i.e. shock treatment) has been found to be an effective treatment for severe cases of ADHD.	F	33 (11.2%)	77 (26.1%)	185 (62.7%)
36. Treatments for ADHD which focus primarily on punishment have been found to be the most effective in reducing the symptoms of ADHD.	F	44 (14.9%)	155 (52.5%)	96 (32.5%)

This table revealed that the highest proportion of correct responses (88.8% n=262) and also the lowest incorrect responses (1.7% n=5) were on item 10," Parent and teacher training in managing an ADHD child are generally effective when combined with medication treatment". The highest proportion of incorrect responses (52.5% n=155) were on item 36," Treatments for ADHD which focus primarily on punishment have been found to be the most effective in reducing the symptoms of ADHD". The majority (64.1% n=189) of teachers selected "Don't know" option in response to item 8," Antidepressant drugs have been effective in reducing symptoms for many ADHD children".

Figure 1 Teachers' overall percentage of the correct, incorrect, and don't know responses on the KADDS.

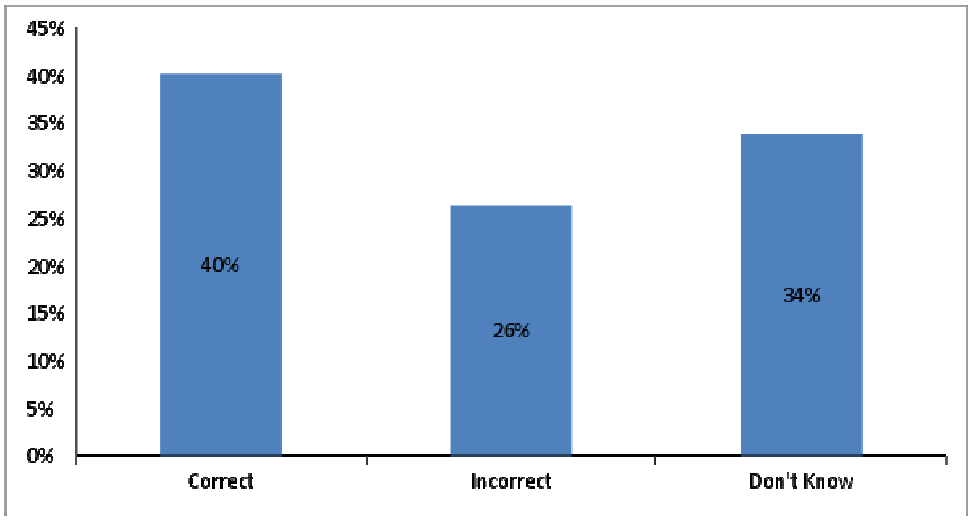
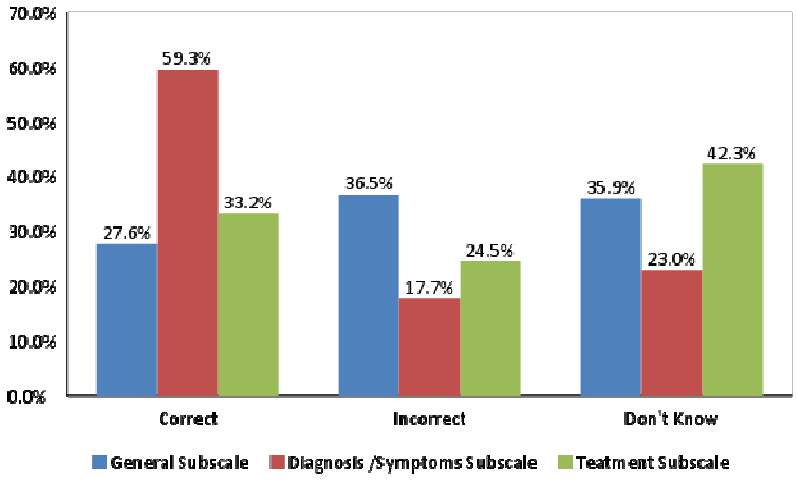


Figure2 Percentage of teachers' score of the correct, incorrect, and don't know responses on the KADDS subscales.



Discussion

In order to examine teachers' knowledge within each of the KADDS subscales, their responses were grouped to represent the three subscales of KADDS.

Teachers' overall percentage score of correct responses (items answered correctly) was 40% which reflect relatively low knowledge of ADHD. Incorrect responses (items answered incorrectly) percentage was 26% which indicate misperceptions of ADHD. Don't know responses (items that teachers admitted they just don't know) percentage was 34% which point to a lack of knowledge of ADHD among teachers. Teachers' overall percentage score of the correct, incorrect, and don't know re-sponses are presented graphically in **Figure 1**.

In Table 2 presents teachers' responses on the first subscale which include 15 items assessing general knowledge about the nature, causes and outcome of ADHD. Nearly twenty eight (27.6%) of the teachers responded correctly, while (36.5%) responded incorrectly, and (35.9%) responded "don't know" to these items. The highest proportion of correct responses (80.7% n=238) and also the lowest incorrect responses (6.1% n=18) were on item 31, "Children with ADHD are more distinguishable from normal children in a classroom setting than in a free play situation", which signify that more than two third of teachers knew that the recognition of ADHD children is appreciated in classroom setting. The lowest correct responses (23.4% n=69) and also the highest proportion of incorrect responses (26.8% n=79) were on item 6, "ADHD is more common in the 1st degree biological relatives (i.e. mother, father) of children with ADHD than in the general population", which signify that more than one fourth of teachers have misconception about the genetic related causes of ADHD. The majority of teachers (52.9% n=156) selected "Don't Know" option in response to item 13," It is possible for an adult to be diagnosed with ADHD", which revealed that more than one half of teachers showed lack of knowledge regarding the possibility for an adult to be diagnosed with ADHD.

In Table 3 presents teachers' responses on the second subscale of KADDS which include 9 items assessing symptoms/diagnosis of ADHD. Fifty nine and three-tenth percent (59.3%) of the teachers responded correctly, while (17.7%) responded incorrectly, and (23%) responded "don't know" to these items. The highest proportion of correct responses (92.5% n=273) and also the lowest incorrect responses (1.4% n=4) were on item 9," ADHD children often fidget or squirm in their seats", which revealed that more than two third of teacher were aware of one of the hallmark symptoms of ADHD. The highest incorrect responses (25.1% n= 74) were on item 7," One symptom of ADHD children is that they have been physically cruel to other people", which indicate that one fourth of teachers showed misconception regarding ADHD symptom. The majority (45.5% n=134) of teachers responded "Don't Know" on item 11," It is common for ADHD children to have an inflated sense of self-esteem or grandiosity", which signify that nearly one half of teachers showed lack of knowledge regarding wither children with ADHD have inflated sense of self-esteem or not.

In Table 4 presents teachers' responses on the third subscale of KADDS which include 12 items assessing the treatment of ADHD. Thirty three and two-tenth percent (33.2%) of the teachers responded correctly, while (24.5%) responded incorrectly, and (42.3%) responded "don't know" to these items. The highest proportion of correct responses (88.8% n=262) and also the lowest incorrect responses (1.7% n=5) were on item 10," Parent and teacher training in managing an ADHD child are generally effective when combined with medication

treatment", which signify that more than two third of teachers knew that an effective treatment of ADHD should be multifaceted and comprehensive. The highest proportion of incorrect responses (52.5% n=155) were on item 36," Treatments for ADHD which focus primarily on punishment have been found to be the most effective in reducing the symptoms of ADHD", which indicate that more than the half of teachers thought mistakenly as they agreed regarding the treatment of ADHD which focus primarily on punishment. The majority (64.1% n=189) of teachers selected "Don't know" option in response to item 8," Antidepressant drugs have been effective in reducing symptoms for many ADHD children", which revealed that more than two third of teachers showed lack of knowledge regarding the drug therapy of ADHD's symptoms.

Percentage of teachers' score of the correct, incorrect, and don't know responses on the KADDS subscales are presented graphically in **Figure 2**.

Conclusion

Teachers have a major role in the identification and assessment of students with ADHD. This study was intended to ex-amine teachers' knowledge and misperceptions of ADHD. Teachers' scores on KADDS were fairly good, pointing to reletavely lack of knowledge about ADHD. Moreover, teachers' level of knowledge of ADHD was positively related to their prior training and experience with ADHD. Results from this study concur with the findings of previous studies (Keetam Alkahtani 2013, Bekle, 2004; Brooka et al., 2000; Canu & Mancil, 2012; Ghanizadeh et al., 2006; Kos et al., 2004; Jerome et al., 1994; Ohan et al., 2008; Sciutto et al., 2000; Snider et al., 2003; Vereb & DiPerna, 2004; West et al., 2005) showing that teachers lack adequate knowledge. Results from this study also bring light to the fact that teachers need to be educated and supported to further their professional development regarding ADHD through in-service training. Teachers who are knowledgeable about ADHD are better prepared to be in a position to offer adequate teaching, assistance, and support for children with ADHD (Goldstein et al., 2011; Lerner et al., 1995).

References

- AAP, American Academy of Pediatrics (2004). *ADHD: A complete and authoritative guide*. Elk Grove Village, I1: Author.
- American Psychiatric Association (APA) (2000). *Diagnostic and statistic manual of mental disorders*, 4th Edition . Text Revision (DSMIV)Washington , Dc: American Psychiatric Publishing Group .
- Barkley, R. (2006). *Attention deficit hyperactivity disorder: A handbook for diagnosis and treatment*. New York: Guilford Press.
- Bussing, R., Gary, F., Leon, C, Garvan, C., & Reid, R. (2002). General classroom teachers' information and perceptions of attention deficit hyperactivity disorder. *Behavioral Disorder*, 27, 327-339.
- Curtis, D., Pisecco, S., Hamilton, J., & Moore, D. (2006). Teachers perceptions of classroom intervention for children with ADHD: A cross-cultural comparison of teachers in the United States and New Zealand. *School Psychology Quarterly*, 21, 171-196.
- DuPaul, G., & Weyandt, L. (2006). School-based intervention for chil- dren with attention deficit hyperactivity disorder: Effects on aca- demic, social, & behavioural functioning. *International Journal of Disability, Development and Education, 53,* 161-176.

- Goldstein, S., Naglieri, J., & DeVries, M. (2011). *Learning and Atten- tion Disorders in Adolescence and Adulthood: Assessment and Treatment* (2nd ed.). John Wiley & Sons.
- Lecendreux, n. (2007) *.L'hyper activité en t d a h* . France : solar.
- Munshi, A. M. (2014). 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 Med Sci Public Health*. 3(4): 444-451.
- Munshi, K. (2013). Teachers' Knowledge and Misconceptions of Attention Deficit/Hyperactivity Disorder. *Psychology*. Vol.4, No.12, 963-969
- Oim, A. (2004). Teachers' Knowledge and misconceptions concerning attention- deficit/ hyperactivity disorder, learning disabilities and childhood depression: Acomparative study between Estonia and Norway. Master thesis. University of Tartu, Department of Psychology.
- Selikowitz, M., (2004). ADHD: The facts. Oxford: Oxford University Press.
- Keetam D. F. Alkahtani , (2013) . Teacher knowledge and misconceptions of attention deficit / hyperactivity disorder Department of Special Education, College of Education, King Saud University, Riyadh, KSA .