Attention Deficit Hyperactivity Disorder in Kindergarten Students

اضطراب نقص الانتباه وفرط النشاط لدى طلاب رياض الأطفال

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Abstract

Deficit hyperactivity disorder (ADHD) is a well- known as a neuro-development disease. It primarily manifests itself in the early stages of childhood growth. The symptoms of ADHD include short attention span, impulsivity, anxiety, and behavioral motor problems. This disorder has proved to negatively impact learning activities during the early stages of childhood development. Research conducted has shown that ADHD being a neuro-developmental disorder, affects not only the academic performance of kindergarten students but also their general well-being.

Kindergarten caregivers are therefore supposed to be in a position to provide the proper support and care that the affected students require. They, therefore, need to understand the symptoms, effects and supportive measures that are necessary in cases of ADHD. Moreover, awareness campaigns should be conducted to create awareness of ADHD and the types of support that the caregivers should offer to their students. Studies say that the increasing cases of ADHD are as a result of lack of sufficient knowledge about the disorder. The promotion of continuous awareness campaigns will alleviate this problem by a considerable percentage. Moreover, the teachers and the caregivers of the diagnosed students will gain more knowledge on how to handle different situations.

Keywords: **Attention Deficit Hyperactivity (ADHD), Caregivers, Teachers, Children, and Support Services.**

Attention Deficit Hyperactivity in Kindergarten Student

Attention Deficit Hyperactivity Disorder (ADHD) does not allow a student to concentrate or remain attentive and hence making them manifest impulsive behaviors. This disorder primarily affects children in the early stages of their childhood. Its symptoms include short attention span, impulsivity, and hyperactivity in a child, which makes learning difficult for all levels of students. Moreover, this disorder may also result in restlessness and reduced activity in children (NIMH, 2016). As per the research conducted by Levy (2014), only approximately 20% of the students diagnosed with ADHD manage to overcome this disorder before adolescence. However, around 80% of the children diagnosed with ADHD reach puberty with this disorder, and in extreme cases, the symptoms prolong to adulthood. Therefore, the lack of proper management of this disorder may affect an individual from childhood to adulthood.

People with ADHD have problems adjusting within society. They tend to fall in lower social classes which forces them to settle for lower-ranking jobs. This lower-end jobs coupled with poor social relationships might result in the abuse of drugs and the commitment of criminal offenses (Thomas et al., 2015). It is, therefore, crucial to address ADHD at its early stages to avoid its effects on children in the upper grades. Children diagnosed with ADHD are neither able to complete tasks and activities that other healthy children of their age can accomplish nor can they concentrate for more extended periods of time. As a result, children with ADHD face many challenges in their day to day lives.

The Problem of the Study

Children with ADHD face a lot of issues concerning learning. Thus, it is essential that the educators attain a certain level of awareness to know how to deal with them (Pontifex et al., 2013). Based on what has been mentioned previously, the problems arising from this study can be formulated by responding to these questions;

i. **To which level do the kindergarten teachers practice the strategies of dealing with children with ADHD in Saudi Arabia?**
ii. **What is the availability of statistically significant variances as at (a=0.05) regarding the level of kindergarten teachers practicing the strategies of dealing with these type of students in Saudi Arabia?**

Importance of the Study

Theoretical Importance of the Study

Research in the field of ADHD has not developed a strong foundation in Saudi Arabia which accounts for the low level of awareness concerning this disorder. Investment in this research area will help spread awareness and in turn improvement in the support services received by these students.

Practical Importance of the Study

Results obtained from the study will help officials and decision-makers in charge of special education identify the extent of mastery of teachers in practicing the strategies of dealing with children with ADHD. Moreover, this study will result in the development of better support services to cater for students with this disorder.

Objectives of the Study

This study aims to;

i. **Reveal the levels of expertise involved in supporting children with ADHD among the kindergarten teachers in Saudi Arabia.**

ii. **Evaluate the performance of the teachers in the provision of supportive and educational services to the ADHD students in relations to their academic qualifications and experience levels.**

Research Questions

Main Question

i. **Do kindergarten teachers in Saudi Arabia have an adequate understanding of ADHD and means of supporting students diagnosed with ADHD symptoms in their jurisdictional areas?**

Sub Questions

ii. **What amount and types of information do the kindergarten teachers have concerning ADHD?**
iii. **Do the teachers have enough knowledge, experience, and skills working with students with ADHD?**
iv. **Are there any measures put forward in helping create awareness among the teachers on how to support students diagnosed with ADHD?**
v. **What type of assistance and support to the teachers need from the administration to provide proper support and care to the ADHD students?**

Assumptions of the Study

The first assumption of this study is that the accuracy, dependability, and rationality of the findings of the study depend on the efficiency of the tools of research. Secondly, it is assumed that the target sample has positive interest towards the research and therefore will provide honest answers while filling the questionnaires.

Limitations of the Study

This study concentrated on a sample composed of kindergarten teachers affiliated to the education directorates in Riyadh in Saudi Arabia for the years 2017/2018 only. The study sample was relatively limited. Moreover, the sample size used was also small, and therefore the results of the research could be biased to some extent. Questionnaires were used in the collection of data. Cases of researcher bias may arise as he/she chooses the wordings of the questionnaire and the areas to emphasize on. Furthermore, the researcher chooses the findings to record and omit when analyzing the feedback from the reports which could result in inaccurate findings. The study sample may also not provide accurate as there is low confidentiality and they are observed and therefore may not respond naturally. The study also depended on empirical statistics to justify its findings without any other alternative analysis methods. Statistical analysis methods are sophisticated and require specialized knowledge and skills which might not be readily available or may be expensive to hire.

The Overview of Attention Deficit Hyperactivity in Kindergarten Students

This research aims to enable the reader to be aware of the needs of the ADHD students and the importance of raising awareness among people and particularly, their caregivers in Saudi Arabia. The

situations surrounding our children with ADHD in Saudi Arabia is critical. All experts and educators are responsible for supporting these students and their teachers. There has been a lot of research and discussions on the matters of education, brain health, and psychological support from the community. More studies are required to gain a better understanding of why those who have ADHD are not fully supported.

Literature Review

A useful literature review of all kindergarten teachers across the world should be conducted to increase awareness levels about ADHD and provision of support services to students with this disorder.

Theoretical and Conceptual Framework of the Study

Special education is considered to be a critical area in the study of ADHD. It helps in the comparison and differentiation of the students exhibiting ADHD symptoms with those that do not. Attention Deficit Hyperactivity Disorder (ADHD) is a significant cause of poor learning abilities among students (Shaw et al., 2014).

According to the National Joint Committee on Learning Disabilities (NJCLD), "ADHD forms part of a collection of disorders that are responsible for difficulties in acquiring and using the skills of listening, speaking, reading and writing. These disorders are as a result of dysfunction in the central nervous system. In other cases, they are as a result of psychological states such as rational retardation, physical disability, emotive or societal disorders, self-discipline problems and mental problems (Cortese et al., 2015).

Developmental and academic difficulties characterize children with ADHD. Developmental problems are depicted in the inability to pay attention, poor cognition, memorizing, language and ways of thinking. On the other hand, academic difficulties include the aspects of reading, writing, calculation, and auditory comprehension, oral expression, reading basic skills and reading comprehension (McLaughlin et al., 2014).

It is evident that dealing with students with ADHD is a great challenge. Therefore, various measures have to be put in practice to promote both the welfare of the students and their caregivers. These measures should include;

i. **Ensuring that there is cooperation between the school and the family of the student to promote teamwork in the provision of the necessary support required by the child. Moreover, working together obtains the best results at home and school (Barbaresi et al., 2015).**
ii. **Enhancing the child's ability to concentrate can be done through the creation of timetables and work schedules to provide guidance (Visser et al., 2014).**
iii. **Specification of the rules and expectations required of the students with ADHD don't relate appropriately to uncertainty or adjustments of standards and expectations. A daily schedule with a list of goals, rules or behavior expectations comes handy in this case.**

iv. **Use of positive reactions. Use positive reinforcement when communicating with a child. Praise the child for positive doings and give rewards where support can be used as a form of motivation (Redmond et al., 2014).**

v. **Use of suitable correction tactics for undesirable behaviors. The penalties of unwanted behaviors must be reasonable (Hart et al., 2013).**

vi. **Giving instructions; Instructions helps a child to maintain focus and hence the minimal chances of confusion. Guidelines help a child concentrate on one assignment or chore at a time (Dalsgaard et al., 2013).**

vii. **Dealing with one thing at a time. When assisting a kid in overcoming their behavioral problems, it is better to concentrate one task before getting to another function. Moreover, it is essential to complement and reward the child for successful accomplishments (Evans & Bunford, 2014).**

From the above mentioned, we see the benefits of teachers' mastering the strategies of dealing with students with ADHD, since acquiring such approaches lead to the desired results of contributing to an improvement of learning for this category of children.

Review of Related Literature

The researcher failed to find a study that handled the subject of the current investigation. However, some studies were related, and these will be presented in chronological order from the most recent to the oldest:

Shehatta & Mahmood, 2014 research with the objective of discovering the efficiency of cognitive-behavioral plans for improving attention span among students with ADHD. These programs were conducted in primary schools in Al-Ras governorate in Saudi Arabia. A sample of over twenty students with ADHD was used. The results showed the effectiveness of the cognitive behavior program based on improving the attention levels among students with learning deficits in primary schools. The findings depicted the presence of statistically significant variations in the attention deficit disorder test between home and school in the previous measurements and favor of homework.

A study by Munshi, 2014, sought to identify the effective intervention approaches in the school including programs made with the attention focused on the significance of the level of knowledge on ADHD in Albania. Samples composed of students diagnosed with ADHD, aged between eight years and nine years comprising 32 children were chosen. The results showed that the teachers of the children with ADHD used the appropriate strategies to deal with these children. The results also showed that one of the neglected aspects of the supporting of students with ADHD is the lack of partnership between parents and schools.

The study of Aldabas, 2015, focused on identifying the degree of effectiveness of the programs provided to address the main symptoms of ADHD from the perspective of parents and employees of the Cognitive Behavior Centers in Madinah. The study sample composed of 77 workers in each center, and 100 parents. There were no differences attributed to experience or gender as per the opinions of the respondents

regarding the efficiency of the strategies provided to address the primary symptoms of ADHD. Through these previous presentations, it is evident that the use of active and successful strategies was essential among teachers of children with ADHD. These strategies helped in improving the children's learning ability

Teachers Knowledge about ADHD

Children with ADHD are considered as needy students because they need special care as compared with other children in educational settings. These children face challenges in their day to day activities, and therefore their educators should be in a position to help them. In some cases, the educators might not be able to fulfill the needs of these students emotionally, academically or even their social needs. Moreover, there are cases whereby educators are only able to meet the academic requirements of the students but not the other essential needs (Abed et al., 2014). Therefore, the more skills, knowledge, and experience the educators have, the better the support the ADHD students will receive. The availability of a proper support network will lead to a conducive environment, and the reduction of the effects of ADHD on children and the number of those affected will gradually reduce as they leave their childhood (Abed et al., 2014).

The Ways and Areas to Support Students with ADHD

Adequate knowledge about ADHD is crucial in the provision of care and support to students with ADHD, especially in their early stages. According to research done by the National Institute of Mental Health (NIMH) in 2016, there are no medicines for curing ADHD. However, some prescriptions help diminish ADHD symptoms when administered appropriately and in the right amounts and mixes of medications (DuPaul & Stoner, 2014).

School-based programs and the conduction of therapeutic sessions not only to the students affected but also to their families is essential in support of the parties involved. Moreover, both the educators and the parents of these students are supposed to remind them to finish their assignments and homework respectively. The government-funded schools in Saudi Arabia are in a position to receive support from the government to cater to the needs of ADHD students (NIMH, 2016). It is also essential to support the educators, parents, and families of the ADHD students through training modules and awareness campaigns to enlighten them on how best to handle these students (Banaschewski et al., 2017). Parents who have undergone Parental Skills Training will help the teachers support the students so that they receive proper support both at home and in school.

The Administration Role to Support Teachers Working With ADHD Students

Education and training of children diagnosed with ADHD require supportive services from the teachers and their family members (Banaschewski et al., 2017). In some cases, dissatisfaction, blame, and anger can develop in the child's family before the ADHD diagnosis. Parents and kids, therefore, require excellent help

to stop negative emotions from boiling over in such cases. Here, psychological health specialists can enlighten caregivers about ADHD and its impact on a household.

Aldabas, 2015, points out that teachers should be allowed to access training sessions that teach supportive measures to help students with ADHD. These training modules will help raise the awareness of the teachers. According to the Ministry of National Guard-Health Affairs (2015), many developments have been made in Saudi Arabia concerning the ADHD issue including sponsoring staff for workshops to increase their knowledge of how to give essential care to students with ADHD symptoms.

Methodology

This study adopts an analytical, descriptive approach since it focuses on current events. The systematic descriptive approach will enable the researcher to obtain explanations for the study questions with minimal intervention from the researcher.

Population and sample of the Study

The people under study included all kindergarten teachers affiliated to the education directorates in Riyadh – in Saudi Arabia for the years 2017/2018. The researcher chose a random sample composed of (67) female kindergarten teachers. A total of (67) questionnaires were distributed to the female kindergarten teachers. Out of the (67) surveys that were distributed, only (60) were returned filled. The remaining (7) were considered invalid as they were not replaced. Table (i) shows the distribution of the samples under study as per the variables.

Table (i) Repetitions and percentages following the study variables

	Category	Repetitions	Percentages
Sex	**Female**	**60.0**	**100.0**
Academic qualification	**Bachelor degree**	**43**	**71.7**
	Master or above	**17**	**28.3**
Experience	**1 – 8 years**	**32**	**53.3**
	Above 8 years	**28**	**46.7**
Total		**60**	**100.0**

Tools of the Study

To attain the research goals, the researcher reviewed the theoretical pieces of literature previously done on ADHD. These included the study of Majko (2017), the study of Ryder J. & Silva (2018), the review of Saad & Lindsay (2010), the research of Clark (2015) and the work of Feng (2007). Moreover, questionnaires were prepared to address the members of the study sample. The surveys consisted of (18) items divided into 3

sections. The first section consisted of 8 things for the strategies before starting learning. The second section included another 8 articles for procedures during implementation. Finally, the last part had 8 things for learning completion.

The validity of the Study Tools

The validation of the study tools was done using two ways;

The validity of arbitrators; the study tools were looked through by six arbitrators and the faculty members in Saudi Universities. The researcher requested for their points of view and notes regarding the validity of the questionnaire's items, the fulfillment of the goal for which they were designed, the level of appropriateness of each piece for the area in which it was placed, and to add or remove any item when necessary. After receiving the questionnaire, it was then modified according to the arbitrators' comments.

The validity of the structure; to determine the cogency of the scale structure, both the correlation coefficients of the scale and the total score were obtained. The sample under study consisted of 15 teachers. The questionnaire's items were analyzed and the correlation coefficient of each piece calculated. The correlation coefficient indicated the validity of every detail in comparison to their total score. The values of coefficient of correlation for each item was 0.59 – 0.92, and with the area of 0.68 – 0.95 as shown in the following table;

Table (2): Correlation coefficients comparisons between the items, total score and the areas they belong.

Item no.	Correlation coefficient with the area	Correlation coefficient with the tool	Item no.	Correlation coefficient with the area	Correlation coefficient with the tool
1	.91**	.82**	11	.92**	.90**
2	.91**	.86**	12	.95**	.92**
3	.90**	.88**	13	.91**	.90**
4	.92**	.87**	14	.82**	.79**
5	.88**	.81**	15	.95**	.91**
6	.85**	.79**	16	.93**	.87**
7	.82**	.84**	17	.93**	.86**
8	.68**	.59**	18	.92**	.89**

***Statistically significant at (a=0.05)**

****Significance level of 0.01***

The table indicates that all correlation coefficients are of acceptable degrees and are statistically significant, thus, none of the items were deleted.

Table (3): Correlation coefficients of the subject areas and the total scores

	Strategies before starting learning	Approaches during implementation	Procedures after learning completion	The tool as a whole
Strategies before starting learning	**1**			
Strategies during implementation	**.943****	**1**		
Strategies after learning completion	**.852****	**.883****	**1**	
The tool as a whole	**.954****	**.966****	**.954****	**1**

***Statistically significant at (a=0.05)**

*****Statistically significant at a significance level of (0.01)***

Reliability of the Tools of the Study

A test-retest method was applied in the verification of the authenticity of the tools of study. This method involved the repetition of the test-retest procedure after two weeks on the different set of samples. Each sample consisted of 15 teachers. The Pearson correlation coefficient of the variables and the coefficient of consistency were calculated. The factor of unity was determined by the application of the internal consistency as per Cronbach's Alpha equation. Table (ii) displays the internal consistency as per Cronbach's Alpha equation (Cho & Kim, 2015). The results obtained were essential for this research.

Table (4): Internal consistency coefficient of Cronbach's Alpha equation. Repetition reliability of the areas and the total scores.

Area	Reliability of repetition	Internal consistency
Strategies before starting learning	**0.86**	**0.89**
Approaches during implementation	**0.90**	**0.79**
Procedures after learning completion	**0.88**	**0.80**
Total score	**0.89**	**0.91**

Variables of the Study

The current study included the following variables;

i. **Independent variables**

Academic Qualifications	**Bachelor's Degree**	**Masters and Above**
Experience	**1 – 8 years**	**Above 8 years**

ii. **Independent variables**

The strategies of dealing with children with ADHD has three dimensions which are high, medium and weak.

Procedures of the Study

To get the study's results, the researcher used the following methods:

i. **Specification of the objectives of the research and after that following the right strategies for the provision of supportive services for kindergarten students with ADHD.**
ii. **Building the research tools in the light of the theoretical literature and related studies were done before the survey. Afterward, the validity and reliability of the scientific procedures involved were verified.**
iii. **Choosing the samples to be studied.**
iv. **Distribution of the study tools over the study samples electronically.**
v. **Fill the necessary data received from members as a feedback of the study samples into the computer.**
vi. **Analysis of data using the SPSS program to get the required data.**

Statistical Treatment

The statistical analysis used in the answering of the study questions included;

i. **Calculation of the arithmetic means of the questionnaire's items.**
ii. **Multivariate analysis of variance of the questionnaire's items.**

To explain the results and to reach a conclusion for this study, the Likert Quintet Scale was used.

Quintet Scale on a scale of 1 to 5.

Strongly Agree	**Agree**	**Disagree**	**Strongly Disagree**	**No response**
5	**4**	**3**	**2**	**1**

From 1.00 – 2.33 poor

From 2.34 – 3.67 medium

From 3.68 – 5.00 high

Data Analysis and the Presentation of the Results

The goal of this study is to reveal the rate at which the strategies formulated to handle children with ADHD among kindergarten teachers in Saudi Arabia are implemented.

Results and Data Analysis

To find out the extent to which kindergarten teachers practice the strategies of dealing with students with ADHD in Saudi Arabia, the arithmetic mean and the standard deviations were calculated.

Table (5): The arithmetic mean and standard deviations of the level of practicing the strategies of dealing with children with ADHD among the kindergarten teachers in Saudi Arabia. (As per descending order of the arithmetic means).

Rank	No.	Area	Arithmetic mean	Standard deviation	Role
1	1	Strategies before starting learning	3.79	.637	high
2	2	Approaches during the implementation	3.65	.452	high
3	3	Procedures after learning completion	3.61	.640	high
		Total score	3.68	.536	high

Table (5) shows that the arithmetic means varied between (3.61- 3.79). The strategies before the beginning of learning had an arithmetic mean of (3.79). On the other hand, the procedure after education had the least arithmetic mean of (3.61). The overall arithmetic mean was (3.68).

The arithmetical mean and the standard deviations of the estimations of the members of the study samples were calculated separately according to the items in each area as follows;

i. The strategies before starting learning:

Table (6): The arithmetic mean, and standard deviations for the elements of the area of the approach before beginning education were as follows:

Rank	No.	Items	Arithmetic mean	Standard deviation	Level
1	2	The students sit close to the teacher away from distractions (windows, doors, playground)	3.95	.832	high

2	**3**	**Allowing the students to have several breaks to get some exercise**	**3.83**	**.785**	**high**
3	**8**	**Minimizing disruption, excessive noise, visual stimuli and chaos inside the classroom**	**3.82**	**.792**	**high**
4	**1**	**Students who suffer this type of disorder are transferred to special education services**	**3.80**	**.998**	**high**
5	**7**	**Combining students who have ADHD with mature and quiet students**	**3.69**	**1.112**	**high**
6	**4**	**Timers, recorded time signals, or verbal signals are used to inform the ADHD student of the remaining time of the lesson**	**3.67**	**.986**	**high**
		The area as a whole	**3.79**	**.637**	**high**

Table (6) shows that the arithmetic means varied between (3.67- 3.95). When the students sat close to the teacher and away from distractions, the highest arithmetic mean was recorded was 3.95. On the other hand, the students that were subjected to timers, recorded time signals and verbal signals recorded the least arithmetic mean of 3.67. The overall arithmetic mean was 3.79.

ii. The strategies during implementation

Table (7): The arithmetic mean and standard deviations for the items of the areas of the strategy implementation during the learning process (descending order as per arithmetic mean).

Rank	No.	Items	Arithmetic mean	Standard deviation	Level
1	**5**	**The teacher chooses the preferred learning method of the child**	**3.88**	**.783**	**high**
2	**2**	**The teacher applies the approach of educational games while performing the lesson**	**3.79**	**.927**	**high**
3	**4**	**The teacher uses positive reinforcements while performing the teaching.**	**3.75**	**.914**	**high**
4	**1**	**The teacher employs the child's energy in performing activities (collecting the notebooks, distribution of worksheets)**	**3.59**	**.938**	**medium**
5	**6**	**The teacher invests in a motivating pattern that stimulates the child to reach the optimum level**	**3.47**	**1.033**	**medium**
6	**3**	**The teacher focuses on using the visual contact with children with ADHD**	**3.43**	**1.064**	**medium**

		The area as a whole	**3.65**	**.640**	

Table (7) shows that the arithmetic means varied between 3.88- 3.43. The teacher's preferred learning method registered the highest arithmetic mean (3.88). Teaching children with ADHD symptoms using visual contact recorded the lowest arithmetic mean (3.43). The overall arithmetic mean was 3.65.

iii. The strategies after learning completion

Table (8): The arithmetic mean and standard deviations for the items of the area of the procedure after learning achievement (descending order as per the arithmetic mean).

Rank	No.	Items	Arithmetic mean	Standard deviation	Level
1	2	The teacher reduces the volume of homework assigned to students	3.78	.783	high
2	5	The teacher chooses suitable tasks for students with hyperactivity	3.72	.927	high
3	1	the teacher guides the student to organize his learning tools	3.65	.914	high
4	3	The teacher invests in the child's curiosity to accomplish some educational tasks	3.59	.938	medium
5	6	The teacher encourages cooperative learning among children with hyperactivity	3.48	1.033	medium
6	4	The teacher focuses on using more than one sense in accomplishing the educational tasks of children with hyperactivity	3.42	1.064	medium
		The area as a whole	3.61	.640	

Table (8) shows that the arithmetic means varied between 3.42-3.78. The highest arithmetic mean was recorded when the teacher reduced the volume of homework assigned to students. On the other hand, the lowest arithmetic mean (3.43) was recorded when the teacher focused on using more than one sense in accomplishing the educational tasks of children with ADHD. The overall arithmetic means whole was 3.61.

To find out whether there were any statistically substantial variations at (a=0.05) on this matter, the arithmetic mean and standard deviations were calculated as in the table below;

Table (9): The arithmetic mean, and standard deviations regarding the level of kindergarten teachers practicing the strategies of dealing with children of ADHD in Saudi Arabia according to the variables of academic qualification and experience were as follows:

			Strategies before starting	Strategies during implementation	Strategies after learning	total score

			learning		completion	
Academic qualification	Bachelor Degree	A B	3.83 .633	3.73 .460	3.64 .647	3.74 .536
	Master or above	A B	3.86 .666	3.65 .440	3.59 .641	3.71 .552
Experience	1 – 8 years	A B	3.83 .626	3.68 .464	3.58 .638	3.71 .545
	More than 8 years	A B	3.86 .660	3.74 .444	3.76 .650	3.76 .535

A = the arithmetic mean B = standard deviation

Table (9) depicts a variance in the arithmetic mean and standard deviations of the levels of practicing the strategies stated. To illustrate the magnitude of the statistical differences between the arithmetic means, the Multivariate Variance Analysis was applied over the areas, in the table (10), and the Multivariate analysis of variance for the tools as a whole, in the table (11).

Table (10): The Multivariate Variance Analysis for the results of the variables of academic qualification and experience over the areas of the level of practicing the strategies of dealing with children with ADHD among kindergarten teachers in Saudi Arabia was as stated below:

Source of variance	Areas	Sum of the squares	DF	Mean squares	F value	Statistical significance
Academic qualification Hoteling =.014 H = .860	Strategies before starting learning Strategies during implementation Strategies after learning completion	.001 .050 .055	1 1 1	.001 .050 .055	.002 .233 .132	.969 .631 .718
Experience Hoteling =.008 H = .938	Strategies before starting learning Strategies during implementation Strategies after learning completion	.033 .025 .112	1 1 1	.033 .025 .112	.078 .115 .271	.780 .735 .605
Error	Strategies before starting learning Approaches during implementation	23.228 11.919	56 56	.415 .213		

	Procedures after learning completion	**23.128**	**56**	**.413**		
Total	**Strategies before starting learning**	**23.933**	**59**			
	Approaches during implementation	**12.057**	**59**			
	Procedures after learning completion	**24.167**	**59**			

Table (11): The two-way analysis of variance for the result of academic qualification and proficiency over the total score of the level of practicing the strategies of dealing with children with ADHD among kindergarten teachers in Saudi Arabia was as follows:

Source of variance	**Sum of the squares**	**DF**	**Mean squares**	**F value**	**Statistical significance**
Academic qualification	**.018**	**1**	**.018**	**.059**	**.808**
Experience	**.047**	**1**	**.047**	**.159**	**.691**
Error	**16.635**	**56**	**.297**		
Total	**16.969**	**59**			

Summary and Conclusions

Summary Findings

The study showed that the level of practicing the strategies of dealing with children with ADHD among kindergarten teachers in Saudi Arabia was of a high standard in all areas. This result may be attributed to the development in the domain of special needs education in Saudi Arabia. This result also corresponds to a certain level with the results of the study of Majko (2017), the review of Ryder J. & Silva (2018), the study of Saad & Lindsay (2010), the research of Clark (2015) and the work of Feng (2007).

The findings revealed the absence of disparities in the level of practicing the strategies of dealing with children with ADHD among kindergarten teachers in Saudi Arabia. The previous result sounds logical to a certain degree as there is a certain level of similarity in the surrounding environments. Therefore, the similarity in the potentials, goals, and training led to the absence of differences as per the variables studied. This result corresponds with the results with the findings of the research of Aldabas, done in 2015 in the Saudi Arabia environment, where that study showed no disparities in the effectiveness of the programs provided to address the main symptoms of ADHD attributed to gender or experience.

Discussion of the Results

The findings of the research indicated that the level of practicing the strategies of dealing with students with ADHD among kindergarten teachers in Saudi Arabia was of a high standard in all areas. This result may be attributed to the development in the domain of special needs education.

The findings also depicted there were no statistically significant disparities in the level of practicing the strategies of handling students with ADHD among kindergarten teachers in Saudi Arabia attributed to the variables of academic qualification and experience. The previous result sounds logical to a certain degree as far as the similar conditions of schools' potentials in the Saudi Arabia environment go, and the practical training of teachers is generally identical to a significant level. Therefore, the similarity in the possibilities, goals, and training led to the absence of differences as per the variables studied. This result agrees with the results of Taleb & Farheen (2013) in the Saudi Arabia environment, where the research depicted minimal disparities in the effectiveness of the programs provided to address the main symptoms of ADHD attributed to gender or experience.

Recommendations

As per the previously mentioned findings, the researcher recommends;

i. **Enhance the ability of teachers of children with ADHD in adopting the strategies of dealing with this group of children because they have a significant impact on improving their learning.**
ii. **Strengthening the communication between teachers and parents of students with ADHD to achieve the principle of integration of education between home and school.**
iii. **Provision of academic support to the students with ADHD due to its impact on developing their education.**
iv. **Conducting more studies due to the need of the Saudi Arabia environment for such studies.**

Memo Recommendation

To: Kindergarten schools in Saudi Arabia

From: Maryam S Albesher

Date: April 25, 2017

Topic: Attention Deficit Hyperactivity Disorder in Kindergarten Students

The main question of research is what kindergarten teachers in Saudi Arabia know about ADHD and ways to support students with this disorder in their educational setting. This memorandum concerns a very relevant subject to kindergarten students in Saudi Arabia. Raising awareness can be very useful in assisting children with this disorder, and it is crucial to develop the strategies and skills among teachers to help kindergarten students with ADHD in Saudi Arabia. However, there have been no studies conducted in Saudi

Arabian schools to address the problems that kindergarten students with ADHD face on a regular basis. This lack of resource is detrimental to effective learning outcomes for students exhibiting this disorder's symptoms in Saudi Arabia. Therefore, this problem should be resolved.

ADHD students on the worldwide who have group support or organizations to help them in their lives can do well. This is especially so in educational settings because most ADHD students were struggling with their teachers and activities in the classroom. The development of strategies encourages teachers to deal with ADHD students.

This research objective concentrates on the aspects that will solve ADHD students' problems in Saudi Arabia in the present time. Moreover, for some families, ADHD diagnosis for the child can be met with much resistance. This can result in a lot of strain on the child and their teachers as well. The Recommendation for Administration to Support Teachers Working with ADHD Students is imperative to assist teachers in this situation.

Education of Teachers: Resolving the problem is contingent upon increasing the awareness regarding educational settings on kindergarten students' diagnosed with ADHD. Programs created with purposes of creating awareness will improve the educators' strategies and coping skills in Saudi Arabia. The goal is to offer recommendations for developing the skills and raise the knowledge of educators who teach kindergarten students with ADHD. For example, providing books, brochures, and educational bags, taking into consideration the cost of awareness materials to provide quality education. Moreover, increasing the abilities of educational experts will improve the knowledge and skills for all people who are working with ADHD students. Once there is a realization that the strategies to cope are helpful for ADHD students as well as other regular students, the initiative to provide these skill sets in the classrooms will be strengthened. The studies indicate the need for attention to the ADHD students and their teachers. The lack of knowledge about ADHD among teachers and parents cause a lot of challenges for children (Taleb & Farheen, 2013).

Professional Development: The research shows results and literature finding of individual studies which can be applied to enhance levels of motivation and therefore the output of the educational system for ADHD. It evident that the developed countries that used these approaches achieved successes when they applied practical and the developmental strategies to support ADHD students. For example, provide training courses for teachers, development projects, and workshops with advanced schools (Schmiedeler & Schneider, 2014). Therefore, the improvements will have a positive result on kindergarten students with ADHD in Saudi Arabia.

Creating Partnerships with Professional Competence: the practical education needs quality of teaching, expert's guidance, using new strategies and technologies to support ADHD, and evaluation of the educational progress to make the meaningful changes on this field. For instance, Saudi Arabia should learn from developed countries and provide trips for teachers to share experiences. Also, financial incentives for teachers would be welcome. As a researcher, the development in the world about ADHD and modern technology

support would help the administration and teachers to have professional education for our ADHD children (Gharam, 2017). The researcher hopes that there will be progress in the area of ADHD and the change is evolving for ADHD students in Saudi Arabia.

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