

Voluntary and Extracurricular Activities to Reduce Attention Deficit Hyperactivity among Students with Learning Difficulties

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Abstract: The present study aimed to find out the impact of a volunteer-extracurricular activity-based program on the reduction of attention deficit and hyperactivity among students with learning difficulties. The study's null hypotheses were formulated, and the training program prepared by the researcher was applied to a sample of (16) students with learning difficulties, divided equally into two experimental and control groups. The study instrument was judged based on the sincerity of the arbitrators and adoption of specific procedures in the implementation of the program. The researcher used a two-group experimental design (experimental and control) with pre and post measurements. After examining the study's null hypotheses using the Mann-Whitney test for differences between experimental and control groups, and Wilcoxon test for differences between the mean rank scores of the experimental group, the results showed that there were statistically significant differences between the mean rank scores of the experimental and control groups in favor of the experimental group. Based on such results, the researcher presented a set of recommendations, including generalization of the training program to the resource rooms, encouragement of children with hyperactivity and attention deficit to involve in voluntary and extracurricular activities.

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1. Introduction

Voluntary work is a sort of positive sympathy with others, which represents one of the components of emotional intelligence, emphasizing the importance of being aware of the feelings of others and sympathized with them to ensure empathy, that is to reciprocate others' feelings and to be affected by them and for them. It also emphasizes the practical procedural side, which requires initiation of helping others in an attempt to resolve their problems or help them solve them and support them emotionally and socially. The voluntary social work has many benefits for the volunteer himself and for the entire community. It leads to the optimum exploitation of the potential of the volunteers in rich and productive domains for the benefit of social development and social reform and then promoting and advancing the communities (Qethmi, 2007).

We may succeed in instilling the culture of volunteerism by activating extracurricular activities, which include many and various events that cover many sports, cultural, social and academic aspects. They help in developing the capacities of the student to live free from restrictions of the required study curriculum, and to advance to life with no limitations other than general restrictions that govern the society as a whole. Here, the student is free to choose the activity that best suits him, which he feels he is in need of it psychologically, socially, scientifically or

physically. It is with this choice that the student exercises his freedom in a realistic way, and finds himself advancing in directions he is prepared to or planning to establish based on self-tendency and/or scientific thinking. It is important that he finds and confronts himself without restrictions so that he devotes the surplus of energy; time; mind and inclinations to this aspect he finds himself in, which may substitute for the unfulfilled wishes through the classroom. He may feel that he needs to practice this type of activity to achieve his extensive desires; inclinations; aspirations in life and discharge his potential energy away from the constraints of the classroom and academic teachings. Thus, he explores the prospects which he would like to be directed to and to complement aspects of his personality, needs and inclinations" (Al-Zahrani, 2005).

Inserting a culture of voluntary work within extracurricular activities allow students a healthy mind-set, because dealing with others in the context of freedom of choice and within the framework of freedom of conduct reflects automatically the collective spirit of the students and establishes among them the capabilities to live in the community correctly.

In talking about students who suffer from attention deficit and hyperactivity, we can say that this kind of programs may help them reduce the

waste of their energies, and focus their attention on beneficial things.

These students have shown developmental disorder during childhood and in many cases before the age of seven years, and were characterized by inappropriate developmental levels in terms of visual and auditory attention and / or behavior of hyperactivity and impulsivity. This disorder may have a negative impact on one or more aspects of life, such as social relations, academic or professional goals as well as cognitive and adaptive functions. Moreover, this disorder could continue to adolescence or adulthood (**Wikipedia, 2006**).

The problems of these children increase at the school age, as they are expected to stay quiet in their places and focus on the tasks before them or merge with others in the classroom. The impact of the school problems for the child extend to the home, where he is assigned homework that puts him and the family together in a real suffering to finish those duties.

In addition, these children suffer from the problem of not being able to follow the instructions, whether at home or school and from difficulty to perform everyday tasks assigned to them or complete the work entrusted to them. They also suffer from rejection by others because of their unacceptable social behavior and that increases with time. At the end of childhood, social behaviors begin to improve and stabilize, but the academic problems continue. **Barkley (1997)** indicated that between the ages of 7-10 years, at least 30-50 % of children who have attention deficit disorder (ADD) or have attention deficit hyperactivity disorder (ADHD) may develop Conduct Behavior symptoms or other behaviors such as lying, authority resistance, and 25 % of them may take the initiative to quarrel with others (**Health Center, 2000**).

The problem of inattention to the difficult instructions and to required school tasks is spectacularly common among the students of the primary stages. It has reached in many studies about 16%, suggesting that many of the students of this stage are having difficulty in concentration or continued inattention for doing difficult tasks, which may in turn leads to educational failure and failure in school subjects.

Rabiner's study, (2005) indicated that around 80% of students with ADHD have problems in academic performance represented in re-grades, transfer to special education classes or withdrawal and dismissal from school. Even those studies conducted on a sample of students who had problems in attention but they were not officially diagnosed have this disorder. They noted that these students have faced problems and learning difficulties over

the subsequent school years such as difficulties in reading; math; difficulty of comprehension and understanding; and difficulty of using time and other developmental learning difficulties.

Rabiner et al. (1999), carried out a study about the educational difficulties experienced by students at the elementary level. It was based on the observation of academic changes in a group of children suffering from attention problems since kindergarten. They were observed throughout the five subsequent school years at the elementary level. Obvious academic problems in children have emerged, especially in reading, where their performance was low in this aspect, indicating that the problems of attention may be an indication of the occurrence of subsequent reading difficulties among children if they were not followed up.

Rabiner et al. (2000) conducted another study involving 620 elementary school students in eight schools in the United States. Their academic achievement was evaluated at the end of the school year in reading, math and written language through their teachers after the application of Conner measure to detect the presence of attention deficit problems. The results showed a low level of reading amounting to 76% in students who appeared to have symptoms of attention deficit compared with those who did not have, and for written language, the performance of students who appeared to have poor attention was down by 92 % from the average peers. This study has confirmed the need for early intervention to treat attention deficit of children who appear to have symptoms of weakness at an early age. It also confirmed the importance of focusing on the situation of children who suffer from the attention deficit on the causes that lead to academic difficulties rather than on the same academic difficulties.

In a study conducted on a sample of 3208 students, diagnosed by a measure of attention deficit hyperactivity in order to sort out those who were suffering from ADHD symptoms, **Tirosh and Cohen (1998)** also stressed on the importance of early intervention to fix problems and causes that lead to learning difficulties. It appeared that 5% of the respondents have symptoms of this disorder. In application of a measure to evaluate language in children with ADHD comparing with children who do not have problems in reading, it has emerged that 45% of those who had ADHD have language difficulties, and it turns out that they were greater among girls than boys. The researcher pointed out that the untreated language difficulties are greatly linked to academic difficulties in terms of language aspects. Therefore, the continuous evaluation of the language aspects of children with ADHD is an important part for the education of these children,

mainly language difficulties are related to the academic difficulties in terms of academic functions.

It seems that the correlation between language difficulties and students with ADHD have been reported in several studies where some of them have drawn attention to the fact that the weak language skills such as poor expressive language or receptive language, as well as low linguistic intelligence is often associated with this disorder.

McInnes et al. (2003) confirmed these results in a study conducted on 77 students aged between 9-12 years old who were diagnosed as having ADHD only and 18 with ADHD accompanied by language difficulties and 19 having language difficulties only without ADHD, and 19 others who did not have any problems. They were assessed through two tests, one of them for listening understanding, and the other to detect errors in 8 reading passages. The test results indicated that in listening comprehension, the performance of all children with ADHD in the study sample was much lower than the rest of the children in the control sample when explaining what they have understood from the aural passages. However, they were showing performance comparable to the average students and better than the students who have language problems only or have ADHD accompanied by language problems, when they were asked specific questions about what they have been listening to.

As for the detection of errors in reading passages, the performance of students with ADHD was much weaker than the performance of the students in the control sample, and better than the performance of average students who have language problems. The researchers believe that there is a relationship between the performance of students who have problems in completing the tasks of study and between weak comprehension skills of complex information that may be presented in instructions, lessons or reading passages in the classroom.

The study stresses the direct relationship between weak comprehension skills in first educational stages and its impact on low academic achievement, in subsequent stages. It also emphasizes the need to focus on the students' understanding and comprehension in terms of instructions and information presented by the teacher at the classroom in order to avoid a deficit in the understanding that leads to weak learning outcomes.

Problem and Importance of the Study:

Students with Attention Deficit Hyper Activity Disorder (ADHD) suffer from many difficulties, most notably the difficulty of concentration, inability to focus attention, and impulsivity, which pose a real threat to their academic achievement. The danger of (ADHD) appears in the lack of the awareness of its

manifestations and symptoms. However, the translation of these symptoms to a kind of stubbornness and unacceptable behavior originated deliberately from the child deprives him/her of their right to have appropriate educational and remedial programs as well as necessary procedures for early intervention.

The (ADHD) is the most common disorder in children, (Barkley, 2006). Moreover, in spite of the varying prevalence rates of this disorder in the literature of special education, but there is agreement on its increased prevalence rate.

The estimated prevalence of (ADHD) among students in the school age is between 2%-18% (**Rowland et al., 2002**). It also affects 3-5% of American society and is believed to affect 5-7% of school students, while the ratio is about 5% of school students in the UK (**Cooper & O'Regan, 2001**).

Moreover, **Place et al. (2003)** found out that around 70% of private school students inflicted with emotional and behavioral disorders meet the diagnostic criteria for (ADHD).

Despite the growing interest in this phenomenon in Western societies and the highlighting of the symptoms; manifestations; methods of diagnosis and treatment of this disorder, to the extent that it has been classified as a disability entitles its sufferer the right to benefit from special education services, but the picture looks gloomy in the Arab environment in general.

The civilized societies have raced in an attempt to develop solutions to these problems. In the past two decades, many researchers became active to intervene with regard to these issues to mitigate their intensity, by suggesting many behavioral and training programs targeted to this category of students. This study falls within those attempts to add new results on the effectiveness of training programs in directing the energies of such students and investing them in a beneficial outcome to alleviate these problems and their impact on their academic and societal performance.

Objectives of the Study:

This study sought to achieve the following objectives:

- Developing a program based on volunteer and extracurricular activities to reduce attention deficit and hyperactivity among students with learning difficulties.
- Identify the program's effectiveness in reducing attention deficit and hyperactivity among students with learning difficulties.
- To bring out a set of findings and educational recommendations that contribute to reduction of motor hyperactivity in children.

Hypotheses of the Study:**The First Null Hypothesis:**

There are no statistically significant differences between the mean rank scores of the experimental group between the pre and post measurements on the dimensions of Pyrex measure of behavior estimate.

The Second Null Hypothesis:

There are no statistically significant differences between the mean rank scores of the control group between the pre and post measurements on the dimensions of Pyrex measure of behavior estimate.

The Third Null Hypothesis:

There are no statistically significant differences between the mean rank scores of the experimental and control groups after the application of the training program.

The Limits of the Study:**Objective Limits:**

The study is limited to examine the effectiveness of the program based on voluntary and extracurricular activities to reduce attention deficit and hyperactivity among students with difficulties.

Spatial Boundaries:

This study is limited to children enrolled in sources rooms who were diagnosed to have attention deficit and hyperactivity in the schools of the Department of Education in Jeddah.

Time Limits:

This study was applied during the first semester of the academic year 2013/2014 AD.

Theoretical Framework and Previous Studies

A lot of studies and research have focused on ADHD over the past years. They have addressed this disorder from several aspects, including the impact of the symptoms of the disorder on the child, family and the community surrounding the child.

Moreover, many researches have been designated to address the issue of academic achievement for students with ADHD in its multiple forms, where the characteristics of this disorder are associated with manifestations of learning difficulties.

Hashim's study (2010) aimed at finding out the effectiveness of multi-modal remedial program in reducing attention deficit and hyperactivity and to measure its impact on academic readiness among a sample of primary school children. It was conducted on a sample of 10 children of the fourth grade, divided into two homogeneous groups; one experimental and the other a control group and a quasi-experimental approach was used. The study used the scale of social, economic and cultural level developed for the Egyptian family (Prepared by: **Khalil, 2000**); a mental abilities test (prepared by: **Farouk Abdel -Fattah, 2003**); a measure of attention deficit and motor hyperactivity disorder

(Prepared by: **Ahmed, 1999**) academic readiness test; the fourth grade level (prepared by: **Farouk Abdel-Fattah, 2000**)' a multi-model treatment program to reduce attention deficit and hyperactivity (Prepared by the researcher); Mann-Whitney test and Wilcoxon coefficient as well as Z value were used to test the significance of differences of two independent samples; Wilcoxon coefficient and Z value to test the significance of the differences of two correlated samples. The results revealed the effectiveness of multi-modal therapy in reducing ADHD, and the improvement of academic readiness among children of the experimental group. The iterative measurement also showed continued improvement achieved by the children of the experimental group.

Mohammadi (2011) designed a training program to modify the behavior of hyperactivity disorder, coupled with attention deficit among students in the fourth grade. The study adopted the experimental method and sampled 40 students divided into two groups, experimental and control. The study results showed the effectiveness of the training program in modifying hyperactivity disorder, coupled with attention deficit, and modifying the difficulty of writing among students of the study sample. The study concludes with some suggestions directed to those involved in students' affairs.

Moreover, the study carried out by **Issa and Joma (2010)** aimed to find out the effectiveness of a counseling program based on art therapy to reduce motor hyperactivity and improve attention among students with learning difficulties. The study sample consisted of 24 students from the third grade enrolled in primary school learning difficulties at Abdullah bin Omar School and Imam Muhammad bin Saud the School in Riyadh during the academic year 1430-1431 AH. A hyperactivity measure, attention deficit disorder measure, Raven IQ Test and the proposed guidance program were applied. In order to process the results and validate the assumptions, some parametrical statistical methods were used including Mann-Whitney test and Wilcoxon test, and to find out the effectiveness of the program, a bilateral sequential correlation coefficient was used. The results indicated the presence of statistically significant differences between the mean rank scores of experimental and control groups in the post application in measurements of ADHD in favor of the experimental group. The results also indicated the presence of statistically significant differences among the mean rank scores of the experimental group in the pre and post measurements on ADHD scale in favor of post measurement, which shows the effectiveness of the counseling program to reduce

hyperactivity and improve attention among students with learning difficulties. There are also no statistically significant differences between the mean rank scores of the experimental group in the two post measurements and follow-up measurements of ADHD which proves the continued effectiveness of the program. **DuPaul et al. (2006)** also conducted a study aimed to determine the differences in academic achievement, which attributed to gender among students with attention deficit and motor hyperactivity disorder. The study targeted 133 male and 42 female students from the elementary school in eastern Pennsylvania who met the diagnostic criteria. The researchers used estimates of teachers and direct observation approach as well as standardized achievement tests as tools for the study. The results showed a significant learning decline among all respondents, regardless of gender, but the low academic level seemed greater in females than in males, compared with average students of the same sex.

In the study carried out by **Keppka (2004)** to test the possibility of improving the response and obedience of children with ADHD to orders and instructions when using a visual focus strategy with the child, where 76 families who have children with ADHD aged between 5-10 years old, participated in this study. The families were randomly divided into two groups of treatment.

Both groups received instructions on how to effectively give commands to children as follows:

Instructions are to be given after the concentration of sight on the child.

Give one type of instructions at a time.

Give instruction as a direct command, such as "Put the pen on the table now," instead of submitting it in the form of a question "can you put the pen on the table now?"

Use a quiet voice tone when giving orders or instructions.

Reducing dispersants that can be found, for example, "turn off the TV when you give instructions".

Enhance a child to follow the instructions and use simple punishment when they do not follow the instructions (such as exclusion - deprivation).

The family group that used visual focus should receive additional instructions to look at the child for 20-30 seconds after giving the instruction, even if the child were not interested from the beginning, and they were informed not to repeat instruction until the end of the period of 20-30 seconds. The aim of the method of visual focus is to forewarn the child of the family's seriousness without posing a threat to the child, as usually happens when parents raise their voices and threaten children when providing

instruction to them. Parents had been trained to avoid the glances of anger during the gaze at the child and replace them with serious stares, which are keen on the child's response. The families have responded to a questionnaire prepared by Barkley about the behavior of children before starting the training where they described the problems that they experienced with their children who have ADHD in 16 different situations. The response to the questionnaire was repeated two weeks after the application of the test to families in the experimental group and the delay of the control group. The results of this study have shown the following:

The results of the two groups before training were very close where families are suffering from many problems for making the children to follow orders.

After two-week training of the experimental group on how to give instructions to their children, as well as to conduct a visual focus, where the responses of trained households indicated a significant improvement in the behavior of children and the following of the instructions, compared with the families of the control group that had not yet begun to follow any training procedure with their children and by 44%. After the households in the control group began applying procedure of how to give instruction to children only without a visual focus, the performance of the children has improved (32%), indicating that the use of the two procedures together "to give instruction appropriately" and conducting "visual focus" lead to better following of the instructions. It is an important aspect that contributes significantly to the benefit of the child from the information given to him. It improves the chances of the acquisition of education in case it had been generalized at school and at home where this strategy can also be used to make it easier for students to follow the classroom and learning instructions.

Kapalka (2004) conducted a study in which they used a Computerized Training of Working Memory in Children with ADHD and suffering from practical functions Disorder, which was a major factor in the success and failure of students who have this disorder. The study was applied for 5 weeks to a sample of students numbering 50 students aged between 7-12 years old. It used a two-level computer program, extensive level and a simple level, both of which included the same content, but of different difficulty. The students were distributed to the two programs, which included a performance associated with visual and auditory working memory through 20 sessions each of which lasted 45 minutes to complete the tasks required, and the child is to perform it either at school or at home in collaboration with the family. At the end of the training, the performance of the two

groups were compared in the lower level and the most difficult level of working memory, as well as their performances were compared again after 3 months without training, to ensure the continuation of the results. The researchers have found the following:

The students who had been trained on the more intensive program of the working memory showed greater improvement than those in the experiment that got less intensive program.

The performance of students who were exposed to more intensive training is better than the other students even on the rest of the practical functions after the training, and even after three months of training.

The impressions of parents indicated that symptoms of impulsivity and hyperactivity and inattention, with children who have been subjected to an intensive working memory program, decreased from what it was before the training, and continued after 3 months of training, especially in the aspect of attention.

Differences between the performances of the two students groups in symptoms according to the views of teachers after training did not indicate any difference.

In general, the results of this study indicated that the use of computer programs designed to working memory among children, contribute to the improving of the performance of children with ADHD if employed properly, which may contribute to reducing of their education problems.

Massad (2005), conducted a study on the effectiveness of family counseling in reducing attention coupled with kinetic hyperactivity among children, which was applied to 10 children with attention deficit and hyperactivity disorder. They were divided into experimental and control groups. The study findings indicated a marked improvement in the children's attention and reduction of hyperactivity and impulsivity of the experimental group on which the family program was applied.

The aim of **Qasim and Abdul Rahman's study, (2003)** was to develop a recreational program and identify its impact on some life and mental skills, as well as motor abilities in children with attention deficit and hyperactivity disorder using the experimental method for one set on a sample of 30 children. The study results indicated that the proposed recreational program has a positive impact on improving some of the life skills and reducing intensity of behavioral problems and adaptation with oneself and the surrounding community.

2. Method and Procedures Study Population and Sample

The study sample consisted of 16 students of those enrolled in sources rooms and diagnosed that they have attention deficit and hyperactivity. The study sample was equally divided into two experimental and control groups.

Study Tools:

Pyrex scale: a measure of behavior designed to detect patterns of disruptive behavior in children who have behavioral problems. It consists of (110) items including (19) behavioral problems, which represents the sub-areas of the scale. Among these problems, (5) areas have been selected as representing more common behavioral problems in children with attention deficit and hyperactivity (attention, adjust the activity, feelings of anger, and the social obedience). One of the main purposes of the scale is to identify patterns of disruptive behavior in children, and to assist in planning appropriate educational programs for the development of specific behavioral areas, and detection of the extent of change occurs on the patterns of behavior in different periods and to evaluate the impact of treatment programs. Validity and reliability of the scale have been confirmed, where it earned high reliability and validity coefficients and appropriate in all sub-domains (**Qaryouti and Jarrar, 1987**).

A resource room teacher is responsible for the scale as he is directly related to the student, and each of the statements is given a degree on a standard scale of (1-5) degrees. After the correction process the scale shows whether the behavioral problems are significant, non-significant, or highly significant.

2 – The Program: it is a program prepared by the researcher, which aims to alleviate hyperactivity and attention deficit faced by the students. It contains a range of extracurricular activities and volunteer work taking place inside and outside the school, which are divided into (13) areas as follows:

Role-playing, acting, puppets and Puppet Theater, perform tasks of leadership in the school, agricultural activities in the park, help the teacher in the classroom, horse program, participating in the school radio, community visits, participation in school committees, additional sports activities, watching video programs related to certain behavioral patterns, and engaging in work groups and social committees.

This program has been derived from the experience of the researchers, and suggestions of teachers and specialists working in resource rooms with long experience as well as of the teaching therapeutic mechanisms directed to students who suffer from attention and hyperactivity problems. It includes the skills provided to students outside the classroom environment (**Zayat, 2006**). The program with its items and training assignments had been

presented to a group of arbitrators of PhDs and workers in the field, who added some modifications related to satisfying students' Preference and attitudes according to the age stages and the focus on physical activities and kinetic gestures outside the framework of the classroom.

Methodology of the Study:

The researcher used the two-group experimental design (experimental and control groups) with pre and post measurements. The study variables were determined as follows: the independent variable: the training program and the dependent variable: hyperactivity and attention deficit. The study relied on the following tools: training program prepared by the two researchers and Pyrex measure (**Qaryouti and Jarrar, 1987**).

Application Procedures of the Study:

The researcher chose a homogeneous group of students in terms of age and mental capacity, following access to their psychological and social files with the help of resource room's specialist in the school. Their ages ranged between (7-10) years old, with a mean of (8.75) and standard deviation of (1.13). Pyrex measure was applied to estimate the behavior on the experimental and control groups to ensure the existence of the problem among them and its level before the start of the training program. It was found that both groups faced significant problems in attention and hyperactivity. The following are the results of Mann-Whitney test, shown on the table (1).

Following the development of the program based on extracurricular activities and voluntary

work, in order to apply to the students of the experimental group, each of: psychological specialist, grade teacher, activities teacher, physiotherapist, social worker, and a professional trainer were trained on how to implement the program and its different activities. In addition, the program was applied to students in the experimental group for a period of 8 weeks inasmuch as five days a week.

Moreover, the children who showed a commitment to the tasks assigned to them in the program were enhanced through phrases of praise and commendation, as well as the use of physical and social reinforcers. The application procedures also included holding of weekly meetings between the teacher and the psychologist at school in order to see how frequently undesirable behaviors were repeated during the week. In addition to flexibility in the use of activities and reinforcers, and avoidance of problems that they may be falling in, and giving suitable feedback for the teacher and specialist participating in the program.

After the end of the period of the behavioral program application, the researcher once again applied Pyrex measure (**Qaryouti and Jarrar, 1987**) on the experimental and control groups. Finally, statistical differences were measured between the pre and post measurements in both experimental and control groups in order to examine the impact of the training program in the alleviation of hyperactivity and attention deficit.

Table (1) The results of Mann-Whitney test for a lack of differences between the experimental and control groups before the application of the training program

Domain	mean		Mean rank		Total ranks		U	W	Z	Significance
	Experimental	control	Experimental	control	Experimental	control				
Weakness in controlling Feelings of Anger	19.33	19.66	6.25	6.75	37.5	40.5	16.5	37.5	-0.248	0.804
Poor Ability to control Activity	19.16	18.66	7.17	5.83	43.0	35.0	14	35	-0.659	0.510
Attention Deficit	14.83	14.33	6.67	6.33	40.0	38.0	17	38	-0.165	0.869
Stubbornness and Resistance	19.16	18.66	7.25	5.75	43.5	34.5	13.5	34	-0.744	0.871
Low Social Obedience	22.83	22.66	6.33	6.67	38.0	40.0	17	38	-0.162	-0.871

Table (1) represents the most common behavioral problems among students in the experimental and control groups. These results are consistent with studies of (**Collins and Cornish, 2002; Hogue et al., 2007**) which reported the prevalence of aggressiveness and attention deficit in children with ADHD. It is noted from the table the lack of statistically significant differences between

the experimental and control groups before the application of the training program, which shows that they are homogenous in terms of behavioral problems. The application of the training program is justified to verify its effectiveness on the experimental and control groups.

3. Results of the Study and Discussion

The First Results of the Null Hypothesis: There are no statistically significant differences between the mean rank scores of the experimental group between the pre and post measurements on the dimensions of Pyrex measure for the behavior estimate. In order to

examine this hypothesis Wilcoxon test and its statistical significance was used for the differences between the mean rank scores of the experimental group between pre and post measurements on Pyrex scale.

Table (2) Wilcoxon test results and statistical significance for the differences between the mean rank scores of the experimental group between the pre and post measurements on Pyrex scale

Pyrex scale	ranks	number	Mean rank	Total ranks	Z value	Significance level
Weakness in Controlling Feelings of Anger	negative	5	3.90	19.50	-1.892	0.058
	positive	1	1.50	1.50		
	equal	0				
	total	6				
Weak Ability to Control Activity	negative	6	3.50	21.00	-2.264	0.024
	positive	0	0.00	0.00		
	Equal	0				
	total	6				
Attention Deficit	negative	5	3.00	15.00	-2.032	0.042
	positive	0	0.00	0.00		
	equal	1				
	Total	6				
Stubbornness and Resistance	negative	6	3.50		-2.22	0.026
	positive	0	0.00	21.00		
	equal	0	0.00			
	Total	6				
Poor Social Obedience	negative	6	3.50	21.00	-2.207	0.027
	positive	0	0.00	0.00		
	equal	0				
	total	6				

The results of table (2) indicate the presence of statistically significant differences in the intensity of behavioral problems between the means of the rank scores of the experimental group before and after the application of the training program on students of the study sample, favoring the post measurement. It was clear that the training program had impact in alleviating a range of behavioral problems contained in Pyrex measure, namely: (ability to adjust the activity, stubbornness and resistance, attention deficit, poor social obedience), but it was not clear that the training program has impact on the problem of weakness in controlling feelings of anger.

The researcher attributes the reason for this to the fact that the activities used in the training program were highly dependent on the motor and social aspect such as: horseback riding; agriculture; physical exercises; work in the Social Committee and the Committee of the morning queue; performing leadership duties within the center; contributing to alleviation of hyperactivity of the students; and emotional discharge, which is reflected in the reduced hyperactivity, as well as the positive impact of social engagement and discipline regulations and instructions in the center. However, that did not reflect the verification of the problem of poor tuning of feelings of anger.

This result is consistent with the study of **Corell and Huthchison (1987)** in terms of the effectiveness of behavioral programs in cases of aggression. It is also consistent with **Qasim and Abdul Rahman's study (2003)**, which demonstrated that these programs have a positive impact on reducing behavioral problems and on adaptation to oneself and the surrounding community. In addition, it is consistent with the findings of **Shash (2001)**, regarding the effect of a social skill development program in reducing behavioral disorders in children.

The results of this study also support **Massad's study (2005)** in terms of the effectiveness of the behavioral program in increasing attention concentration.

The Results of the Second Null Hypothesis:

There are no statistically significant differences between the means of the rank scores of the control group between the pre and post measurements on the dimensions of Pyrex measure for behavior estimate. In order to examine this hypothesis, Wilcoxon test and its statistical significance was used for the differences between the means of rank scores of the control group between the pre and post measurements on Pyrex scale.

The results of table (3) indicate a lack of statistically significant differences in the severity of the problem among the means of rank scores of the

group of students study sample who did not receive the training program, where it turns out that the problems with the students of the control group were not affected. The researcher attributes the reason for this to the fact that the behavior modification mechanisms for the control group are dependent on

orientation and verbal counseling rather than on practical activities done by the child which have been changed by education routine practice, as the conduct will quickly return once the orientation sessions and verbal guidance came to an end.

Table (3): Wilcoxon test results and its statistical significance for the differences between the means of rank scores of the control group between the pre and post measurements on Pyrex scale

Pyrex scale	ranks	number	Mean rank	Total ranks	Z value	Significance level
Weakness in Controlling Feelings of Anger	negative	3	2.50	7.5	0.00	1.00
	positive	2	3.75	7.5		
	equal	1				
	total	6				
Weak Ability to Control Activity	negative	3	3.33	10.00	-0.707	0.480
	positive	2	5.50	5.00		
	Equal	1				
	total	6				
Attention Deficit	negative	4	2.63	10.5	-0.828	0.408
	positive	1	4.50	4.5		
	equal	1				
	Total	6				
Stubbornness and Resistance	negative	3	3.00	9.0	-0.447	0.655
	positive	2	3.00	6.0		
	equal	1	0.00			
	Total	6				
Poor social obedience	negative	2	3.00	6.0	-0.447	0.655
	positive	3	3.00	9.0		
	equal	1				
	total	6				

The Third Null Hypothesis:

There are no statistically significant differences between the means of rank scores of the experimental and control groups after the application of the training program and in order to examine this

hypothesis, Mann-Whitney test was used due to the existence of differences between the experimental and control groups after the application of the training program.

Table (4): The results of Mann-Whitney test due to the presence of differences between the experimental and control groups after the application of the training program.

Domain	Mean		Mean rank		Total ranks		U	W	Z	Significance
	Experimental	control	Experimental	control	Experimental	control				
Weakness in Controlling Feelings of Anger	17.00	19.66	5.25	7.75	31.5	46.5	10.50	31.5	-1.207	0.227
Poor Ability to Control Activity	12.66	18.33	3.50	9.50	21.0	57.0	0.00	21.0	-2.898	0.004
Attention Deficit	11.83	13.83	4.25	8.75	25.50	25.50	4.50	25.5	-2.201	0.028
Stubbornness and Resistance	14.66	18.50	3.67	9.33	22.0	56.0	1.00	22.0	-2.761	0.006
Low social obedience	15.50	22.83	3.50	9.50	21.0	57.0	0.00	21.0	-2.887	0.004

The results of table (4) show the presence of statistically significant differences in the severity of behavioral problems among the means of rank scores of the experimental and the control groups after the application of the training program on the experimental group, consisting of students of the study sample. There were differences between the

experimental and control groups in a set of behavioral problems contained in Pyrex measure (the ability to adjust the activity, attention deficit, stubbornness and resistance, poor social obedience), while no differences shown between the experimental and control groups in the problem of weakness in controlling anger.

The researcher attributes the reason for this to the fact that the behavioral training program followed was contrary to the daily routine practiced for children in the control group. It gave the children in the experimental group the opportunity to exercise many motor and social activities, which were missing, and replaced many of the behaviors of noncompliance and frequent activity with alternative mobility and social activities which satisfy tendencies, interests and attention of children in the experimental group. While the training program did not contain activities that would reduce the feelings of anger. This result is consistent with the results of **Shash's studies (2001)**; and **Homaidhi (2004)**, which demonstrated the effectiveness of behavioral training programs in alleviating intensity of behavioral problems among the experimental groups.

Recommendations:

Based on the results of the study, the researcher offers the following **recommendations**:

- Generalize the training program in the resource rooms in order to benefit from it in the reduction of hyperactivity and attention deficit.
- Provide an opportunity for students with hyperactivity and attention deficit to exercise kinetic and social activities beyond the routine of school, in order to increase their behavioral and social adaptation during the school day.
- Children with hyperactivity and attention deficit should be involved in scholastic and social committees that will satisfy their tendencies for leadership and participation, and increase the level of a sense of responsibility.
- Modify educational programs in the resource rooms, which depend on the daily quota system, to show flexibility in the training of students with hyperactivity and attention deficit correspondent to their abilities and the problems they suffer from.

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