Research Article

EFFECTIVENESS OF PARENT TRAINING PROGRAM (PRE AND POST-ASSOCIATION) FOR ADHD CHILDREN IN PRIMARY SCHOOL DUHOK CITY

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Abstract

Objective: The aim of the current study was to examine the effectiveness parent training program, for Attention Deficit Hyperactivity Disorder (ADHD) students in primary school.

Methods: In this study, 500 participants with ADHD (aged 6 to 15 years). A cross-sectional study used to assess the effectiveness of parent training programs for ADHD students in primary schools and its impact on reaction time performance were used as pre-tests and post-tests across groups. (Data were analysed PSS version 26).

Result: The result indicated statistically significant differences between pre and post parents training P-value 0.007 the result showed a clear agreement for the psychological and behavioural disorders of the parents.

Conclusion: In conclusion, parent-training programs appear to be successful in treating the primary symptoms of ADHD in school-aged children. Across this study, the parent training programs seemed to be able to increase parental confidence in their management abilities and improve their psychological problems. Recommendation: provide the ADHD center with a competent counsellor or nurse to assist the family and their child to improve their situation. *ASEAN Journal of Psychiatry, Vol. 25 (2) February, 2024; 1-10.*

Keywords: Attention Deficit Hyperactivity Disorder (ADHD); Parent Training; The Program; Primary School

Introduction

Parent training programs have been shown to be effective in improving outcomes for children with ADHD. Studies have shown that these programs can lead to improvements in ADHD symptoms, behavior, and academic performance. Pre- and post-association studies have also shown that parent training programs can lead to improvements in parental stress, family functioning, and parenting practices. It is necessary to note that the effectiveness of these programs can vary depending on the specific program used and the child's and families individual needs.

Attention deficit hyperactivity disorder (ADHD) is a disorder for all age Characterized by a pattern of extreme pervasive, persistent and debilitating inattention, over activity and impulsivity. It is believed to be one of the most common reasons for mental health referrals to family physicians, paediatricians, paediatric neurologists and child and adolescent psychiatrists. Although originally thought to remit during childhood, the symptoms of ADHD have also been shown to persist in patients through adolescence and into adulthood. The disorder is chronic, with one third to one half of those affected retaining the condition into adulthood. It interferes with many areas of normal development and functioning in a child's life. Children with ADHD are more likely than their peers to experience educational underachievement, social isolation and antisocial behaviour during the school years and to go on to

have significant difficulties in the post-school years [1].

Attention deficit/hyperactivity disorder is one of the most common neurodevelopmental disorders of childhood. The worldwide prevalence in 5.3% in a systematic review of 102 studies from all continents, with a majority from North America and Europe [2].

Children ≤ 18 years has been estimated at Attention Deficit Hyperactivity Disorder (ADHD) is characterized by pervasive and impairing symptoms of inattention, hyperactivity, and impulsivity according to DSM-IV [3].

The World Health Organization (WHO) uses a different name Hyperkinetic Disorder (HD), but lists similar operational criteria for the disorder. Regardless of the name used, ADHD/HD is one of the most thoroughly researched disorders in medicine [4].

Attention-deficit/hyperactivity disorder is among the most common neurobehavioral presenting for manage in children. It carries a high rate of comorbid disorder problems such as Oppositional Defiant Disorder (ODD), conduct disorder, mood and anxiety disorders learning disorder, and cigarette and substance use disorders. Across the life, the social and societal costs of untreated ADHD are considerable, including academic and occupational underachievement, delinquency, motor vehicle safety, and difficulties with personal communication [5-7].

ADHD affects an estimated 4% to 12% of school-aged children worldwide with survey and epidemiologically derived data showing that 4 to 5% of college aged students and adults have ADHD. In more recent years, the diagnosis of ADHD in adults has been increasing although treatment of adults with ADHD continues to lag substantially behind that of children. In contrast to a disproportionate rate of boys diagnosed with ADHD relative to girls in childhood, in adults, an equal number of male and female with ADHD are presenting for diagnosis management and treatment [8-11].

Objectives

1. Identify the biographic data of the sample.
2. Awareness and training program for parent about ADHD in primary schools.
3. Effectiveness of the training program in primary schools in Duhok City.
4. Comparison between ADHD before and after parent training program.

Materials and Methods

Design of the study

A cross sectional study used to assess the effectiveness of parent training program for ADHD students in primary schools and its impact on the reaction time performance

The study is planned to be conducted on students in primary schools in Duhok city.

Time of the study

The present study will start from the 1st July 2021 to 1st January 2023.

The sample of the study

A systematic random sampling of 500 children, male and female students in the primary schools in Duhok City.

The criteria for selecting the sample of the study

Inclusion criteria

- Students in the primary schools.
- Both genders.
- Students and families who agree to participate.

Exclusion criteria: Students and family who reject to participate in the study.

Instruments for data collection

Questionnaire form will be prepared for the purpose of data collection from study sample.

The questionnaire form composed of the following

Part I: Socio-demographic characteristics.

Part II: Prevalence and Risk factor by questionnaire

Part III: A structure and well-organized parent training program will be applied.

Parent training programs include

Engagement modules

E1: Understanding the Family: Talk about the values, qualities, and parenting styles that parents and adolescents share.

E2: Focusing Treatment Goals: Determine and prioritize the areas that need changing for parents and teen.

E3: Partnership Skills: Discuss keeping calm under stress. Introduce "I" statements and reflective listening techniques. Make arrangements for a parent-teen practice session to be held at home.

E4: Creating Structure at Home: Talk about creating a home schedule that strikes a balance between obligations and fun activities.

Skill modules

S1: Writing Down Homework

S2: Making a Homework Plan

S3: Organization Checks:

S4: Time Management Strategies

S5: Study Skills

S6: Note Taking

S7: Problem Solving

Method of data collection

Data will be collected through the utilization of the questionnaire (Primary school in Duhok City).

Validity and reliability of the instrument

The validity of the instrument will be assessed by the panel of experts. Reliability of the study will be done by using the measurement of the study and find out the test and retest.

Ethical consideration

A. Approval must be taken from ethical committee
B. Confidentiality and privacy regarding personal issues of the clients.

Data analysis

Data will be analysis by using SPSS version 26. Chi square and Fischer Exact Tests will be used to find out the association.

Duration and timeline

The present study will be started from the 1st July 2021 to 1st January 2023.

Results

Statistical analysis

Data were entered, and analyzed using IBM SPSS version 28. Continuous data were described by their mean, range, and standard deviation. Categorical data were described using frequency and frequency percent tables. To test difference between two means, the unpaired t-test was used for independent samples and the paired t-test was used for dependent or paired samples. To test the relationship between categorical variable, the Chi-square test was used, and when this was inappropriate because of low cell frequency, Fisher's exact test was used. McNemar-Bowker test was used to test pre-/ post-training severity of ADHD in the 45 children who represented the intervention group. A P-value ≤ 0.05 was considered statistically significant.

Five hundred school children recruited to this study with minimum age 6years to the maximum age 15 years old, nearly 55.6 of them female and 44.4 of them are male. 47.4% in the age group (6-8), the distribution of six classes is the same 16.8%, most of them are Muslim 97.6% and have moderate socioeconomic states 53.6%.

The result also shows that 10.4% of the children have attention deficit hyperactivity disorders. There are no statistically significant differences between ADHD and non-ADHD cases P-value 0.088.

Regarding the Characteristics of the 52 ADHD cases and (the 24 pupils without comorbidity were involved in the intervention or training part of the study) appear that Multiple Long-Term Conditions (MLTC) such as conducted disorder 9.6%, anxiety and depression 13.5%, learning disabilities 30.8%. In regard to type of ADHD combined 42.3%, inattentive 44.2, and hyperactive 13.5. 65.4% have moderate symptoms of ADHD and 57.7% have moderate impairment.

The study indicated the relationship between presence/absence of ADHD and pupils' sociodemographic characteristics, no significant relation between sex and religion with and religion but high significant relation between age, class, and economic state with ADHD, no-ADHD.

Table 1. Sociodemographic characteristics of all the studied pupils.

Characteristic		**No.**	**%**
Sex	Male	222	44.4
	Female	278	55.6
Age groups (years)	8-Jun	237	47.4
	11-Sep	223	44.6
	15-Dec	40	8
Class	1	84	16.8
	2	83	16.6
	3	84	16.8
	4	83	16.6
	5	83	16.6
	6	83	16.6
Socioeconomic state	low	120	24
	Moderate	268	53.6
	High	112	22.4
Religion	Muslim	488	97.6
	Christian	6	1.2
	Yezidian	6	1.2
Residence	Baroshki	136	27.2
	Nzarki	81	16.2
	Sinaa	62	12.4
	Hay Shorta	62	12.4
	Zrka	42	8.4
	Hay Askari	39	7.8
	Gribasi	40	8
	KRO	38	7.6
School	Hiwa	42	8.4
	Shorash	40	8
	Roshna	40	8
	Ararat	62	12.4
	Chreesk	39	7.8
	Barzi	62	12.4
	Payman	62	12.4
	Ordixan	38	7.6
	Shreen	74	14.8
	Knowledge	41	8.2
Total		500	100

Prevalence of ADHD among all the studied pupils						
		No.	%			
ADHD	ADHD	52	10.4			
	Non-ADHD	448	89.6			
Total		500	500			
Descriptive statistics of age of 52 ADHD cases and 448 non-ADHD children						
No.	Minimum	Maximum	Mean	Std. Deviation	*P*-value*	
52	6	15	8.33	2.2	0.088	
448	6	15	8.81	1.87		
Note: *Based on unpaired t-test.						

Table 2. Characteristics of the 52 ADHD cases (the 24 pupils without comorbidity were later involved in the intervention or training part of the study).

Characteristic		**No.**	**%**
Comorbidity with ADHD	No comorbidity	24	46.2
	Conduct disorder	5	9.6
	Anxiety and depression	7	13.5
	Learning disabilities	16	30.8
Type of ADHD	Combined	22	42.3
	Inattentive	23	44.2
	Hyperactive	7	13.5
Severity of symptoms of ADHD	Mild	12	23.1
	Moderate	34	65.4
	Severe	6	11.5
Impairment	Impairment	52	100
	No impairment	0	0
Degree of impairment	Mild	12	23.1
	Moderate	30	57.7
	Severe	10	19.2
Severity of ADHD by impairment	Mild	12	25
	Moderate	30	55.8
	Severe	10	19.2
Total		52	100

Table 3. Relationship between presence/absence of ADHD and pupils' sociodemographic characteristics.

Characteristic		**ADHD**		**Non-ADHD**		**Total**		***P*-value**
		No.	**%**	**No.**	**%**	**No.**	**%**	
Sex	Male	30	57.7	197	44	227	45.4	0.06
	Female	22	42.3	251	56	273	54.6	

Age groups (years)	8-Jun	35	67.3	202	45.1	237	47.4	<0.002
	11-Sep	11	21.2	212	47.3	223	44.6	
	15-Dec	6	11.5	34	7.6	40	8	
Class	2-Jan	30	57.7	137	30.6	167	33.4	<0.001
	4-Mar	14	26.9	153	34.2	167	33.4	
	6-May	8	15.4	158	35.3	166	33.2	
Socioeconomic state	Low	23	44.2	97	21.7	120	24	0.001
	Moderate	21	40.4	247	55.1	268	53.6	
	High	8	15.4	104	23.2	112	22.4	
Religion	Muslim	50	96.2	438	97.8	488	97.6	0.229
	Christian	2	3.8	4	0.9	6	1.2	
	Yezidian	0	0	6	1.3	6	1.2	
Total		52	100	448	100	500	100	

Table 4. Relationship between presence/absence of ADHD and pupils' medical history (risk factors).

Medical history		**ADHD**		**Non-ADHD**		**Total**		**OR (95% CI)**	***P*-value***
		No.	**%**	**No.**	**%**	**No.**	**%**		
Family history	Yes	20	38.5	18	4	38	7.6	14.9 (7.2-31.0)	<0.001
	No	32	61.5	430	96	462	92.4		
Twins	Yes	4	7.7	7	1.6	11	2.2	5.3 (1.5-18.6)	0.02
	No	48	92.3	441	98.4	489	97.8		
Alcohol drinking, drugs, medication during pregnancy	Yes	1	1.9	2	0.4	3	0.6	-	0.281
	No	51	98.1	446	99.6	497	99.4	-	
Malnutrition during pregnancy	Yes	6	11.5	5	1.1	11	2.2	-	<0.001
	No	46	88.5	443	98.9	489	97.8	-	
Child malnutrition	Yes	6	11.5	7	1.6	13	2.6	-	<0.001
	No	46	88.5	441	98.4	487	97.4	-	
Child accident, fall from height, brain injury	Yes	4	7.7	3	0.7	7	1.4	-	<0.001
	No	48	92.3	445	99.3	493	98.6	-	
Eating a lot of canning sugars, food additives, wheat	Yes	30	57.7	117	26.1	147	29.4	-	<0.001
	No	22	42.3	331	73.9	353	70.6	-	
Using a lot of electronic devices: TV, iPad, mobile	Yes	37	71.2	260	58	297	59.4	-	0.068
	No	15	28.8	188	42	203	40.6	-	
Hearing impairment	Yes	1	1.9	3	0.7	4	0.8	-	0.356
	No	51	98.1	445	99.3	496	99.2	-	
Type of delivery	CS	22	42.3	103	23	125	25	-	0.002
	NVD	30	57.7	345	77	375	75	-	

Time of delivery	Premature	10	19.2	23	5.1	33	6.6	-	<0.001
	Normal	42	80.8	425	94.9	467	93.4	-	
Exposure to lead	Exposed	14	26.9	26	5.8	40	8	-	<0.001
	Non-exposed	38	73.1	422	94.2	460	92	-	
Total		52	100	448	100	500	100	-	-

Note: *Based on Chi-square test or fisher's exact test.

Table 5. Simple and complex reaction times (each as average of five readings) by presence/absence of ADHD in 90 children, before parent training.

	Simple Reaction					P-value*
	No.	**Minimum**	**Maximum**	**Mean**	**Standard deviation**	
Children with ADHD**	45	694.8	1598.6	1032.1	189.1	<0.001
Children without ADHD	45	404.6	850.6	584.01	83.15	
Complex reaction						
Children with ADHD**	45	824.2	2088	1081.48	235.63	<0.001
Children without ADHD	45	426.4	687.6	546.29	74.81	

Note: *Based on unpaired t-test; **Include 24 pupils with ADHD and 21 cases of ADHD taken from the MCH Center.

Table 6. Characteristics of the 45 ADHD cases selected for parent training, with results of the training at the end.

Characteristic		**ADHD cases (initially n = 45)**	
		No.	**%**
Type of ADHD	Combined	17	37.8
	Inattentive	17	37.8
	Hyperactive	11	24.4
Severity of symptoms of ADHD	Mild	11	24.4
	Moderate	23	51.1
	Severe	11	24.4
Impairment	Impairment	45	100
	No impairment	0	0
Degree of impairment	Mild	12	26.7
	Moderate	23	51.1
	Severe	10	22.2
Severity of ADHD before training	Mild	12	26.7
	Moderate	23	51.1
	Severe	10	22.2
ADHD after training	ADHD	14	31.1

	No ADHD	31	68.9		
Severity of ADHD after training	Mild	11	78.6		
	Moderate	1	7.1		
	Severe	2	14.3		
	No ADHD	31	68.9		
Total		45	100		
The effect of parent training on the frequency of ADHD (also shown in the previous table)					
Cases with ADHD before training		ADHD after training			
		ADHD		No ADHD	
No.	%	No.	%	No.	%
45	100	14	31.1	31	68.9
Note: A statistical test and p-value cannot be calculated because of the lack of controls (ADHD cases without training), i.e., no controls for the 45 children who represented the intervention group.					

Table 7. Comparison of the severity of ADHD (according to impairment) before/ after parent training.

		Severity of ADHD after training						**Total**		***P*-value***
		Mild		**Moderate**		**Severe**				
		No.	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**	
Severity of ADHD before training	Mild	1	100	0	0	0	0	1	100	0.007
	Moderate	7	87.5	1	12.5	0	0	8	100	
	Severe	3	60	0	0	2	40	5	100	
Total		11	78.6	1	7.1	2	14.3	14	100	
Note: *Based on McNemar-Bowker test.										

Study also revealed that there is high statistical significant relationship between presence/absence of ADHD and pupils' medical history (risk factors) such as family history, twins, Alcohol drinking, drugs, medication during pregnancy, child malnutrition, fall from high and canning sugars, time, type of delivery and exposed to lead <0.001 [12-14].

This study also indicated a statistically significant differences between pre and post parents training P-value 0.007.

Discussion

Throughout this chapter, interpretation and discussion of the study findings were presented with supportive evidence available in the literature, such presentation was organized with regard to the study objectives as follows:

Part 1: Socio demographic Characteristics of the attention deficit hyperactivity disorder.

The result of the study reveals that most of the pupils at school age, these findings coincide with the findings of A 2008 evaluation of the "KiGGS" survey, monitoring 14,836 girls and boys (aged between 3 to 17 years), which showed that 4.8% of the participants had an ADHD diagnosis, and not matched with the same study according the gender female was more than male While 7.9% of all boys had ADHD, only 1.8% girls had it, The frequency of the diagnosis differs between male children (10%) and female children (4%) in the United States. Nearly all the pupil's families are Muslim may be because most of the Kurdistan people are Muslim and live at the level of moderate socio-economic status [15].

Large numbers of the pupils experienced ADHD in Kurdish society but were not diagnosed because most of the combined with other disorders or medical history of the family in addition to the use of drugs, substances, medication during pregnancy, child malnutrition, and child accident these finding 1. Research to date has shown that ADHD may be caused by a number of things, including2: Brain anatomy and function, Genes and heredity, Significant head injuries, Prematurity, and Prenatal exposures, such as alcohol or nicotine from smoking. The diagnosis is based on a pattern of the symptoms listed above. When the person with suspected ADHD is a child, parents and teachers are usually involved during the evaluation process. Most children with ADHD have at least one other developmental or mental health problem. This problem may be a mood, anxiety, or substance use disorder; a learning disability; or a tic disorder [16].

A training program for behaviour management was applied to parents of children with ADHD in a pretest-posttest design, using measures from Child Behaviour Check List (CBCL) and Parenting Scale. A significant improvement was found in ADHD.

Conclusion

Parent-training programs appear to be successful in treating the primary symptoms of ADHD in school-aged children. Across this study, the parent training programs seemed to be able to increase parental confidence in their management abilities and increase their self-esteem. Coincidentally, it also appears that they were able to reduce parents' stress, as well as lead to a reduction of ADHD symptoms and child noncompliance. Research to include both fathers and mothers in the treatment program and to continue to investigate possible differential effects of the parent-training program. Additionally, research designs should focus more attention on possible parental problems and their influence on treatment effects. Moreover, equal attention should be placed on the evaluation of parent training programs within clinical and community settings. Lastly, the sustainability of treatment effects should be evaluated well after the conclusion of the study.

Recommendation

Provide schools with psychological therapists or counsellors to observe children who have played with hyperactivity and attention deficit disorder and send them to specialized places to train parents on how to deal with them.

Training parents and teachers on how to deal with children with ADHD through a special program in special places or social media.

Teaching and guiding teachers on how to deal with children who have ADHD in schools and sending them to special centers in the event that there are many symptoms

Promoting these programs for training parents in all mental health centers for children, and showing their importance and the strength of their impact

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