The Effectiveness of Rehabilitation Programs of Learning Disabilities on Children with Attention Deficit Hyperactivity Disorder

Thesis
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اقْرَأْ بِاسْمِ رَبِّكَ الَّذِي خَلَقَ (1) خَلَقَ الْإِنْسَانَ مِنْ عَلَقٍ (2) اقْرَأْ وَرَبُّكَ الْأَكْرَمُ (3)
الَّذِي عَلَّمَ بِالْقَلَمِ (4) عَلَّمَ الْإِنْسَانَ مَا لَمْ يَعْلَمْ (5) سورة العلق

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LIST OF CONTENTS

LIST OF FIGURES

Figure X: pretest and post test of 1st group under pharmacological treatment (n=10).

Figure XI: pretest and post test of 2nd group under rehabilitation program (n=10).

Figure XII: pretest and post test of 3rd group under rehabilitation program and pharmacological treatment (n=10).

Figure XIII: post test of 3 groups (n=30).

LIST OF TABLES

LIST OF ABREVIATIONS

ADHD Attention Deficit Hyperactivity Disorders

IQ Intelligence Quotation

RD Reading disorder

DAT dopamine transporter gene

HKD: hyperkinetic disorder

Introduction

Attention Deficit Hyperactivity Disorders (ADHD) is considered to be a disorder that interfere with a child's ability to do well at school. The National Institute of Mental Health indicates that 20%-30% of children with ADHD have a learning disability. Learning Disabilities can appear in preschool children as problems in understanding sounds or words or having a hard time using words to express themselves. School age children with learning disabilities can have difficulty in reading, spelling, writing and/or arithmetic. One of the most well known learning disability is dyslexia, a reading disability **(Bairley, 2009).**

A student with a learning disability has a deficit in one or two areas while performing at or above average in other areas. For example, a student with a reading disability will usually have no trouble with mathematics unless they have a disability in that area. In schools, students are diagnosed with a learning disability when there is a significant discrepancy between their Intelligence Quotation IQ and performance on achievement tests. These tests are usually given by the school psychologist and are different from the standardized tests that are given to the entire school**.** In contrast, ADHD affects learning globally and compromises all cognitive functions, rather than just one or two. This is not measurable on tests, unless the tests were given incorrectly (for example, if the tests were done while the student was distracted). Although learning disabilities are diagnosed by the school system, ADHD cannot be. ADHD is a medical condition and the diagnosis can only be made by medical professionals **(Darcy, 2008)**.

Considerable advances have been made in developing effective intervention for each disorder separately, but surprisingly little research has directly evaluated intervention for children with co-occurring ADHD+RD (Reading disorder) (Miranda et al., 2011; Sexton et al., 2012). A logical starting point in developing a comprehensive treatment plan for ADHD+RD is to test a combination of the best known treatments for each of the disorders separately: specifically, stimulant medication to reduce the behavioral symptoms for ADHD and intense, focused reading instruction for RD. The effects of medication on the behavioral symptoms of ADHD and of reading instruction on reading outcomes in RD have been well documented, but the effectiveness of these interventions for comorbid ADHD+RD is unclear (**Rosemary Tannock,et al 2018)**

Aim of the work

The aim of this work is to evaluate the role of rehabilitation programs of learning disabilities on children with attention deficit hyperactivity disorder (ADHD) children, and compare the effect of pharmacological treatment, rehabilitation program of learning disabilities, and both together on children with attention deficit hyperactivity disorder children. In order to choose the best method for treating similar cases later on.

ATTENTION DEFICIT / HYPERACTIVITY DISORDER (ADHD)

I. Definition

Attention deficit / hyperactivity disorder (ADHD) consists of a persistent pattern of inattention and / or hyperactive and impulsive behavior that is more severe than expected in children of that age and level of development (**Hanan and Deghady, 2004).**

II. Epidemiology

Reports on the incidence of ADHD in the United States have varied from 2 to 20 percent of grade school children. A conservative figure is about 3 to 7 percent of prepubertal elementary school children. **(National Institute of Health Consensus Development Conference Statement, 2000).** ADHD is more prevalent in boys than in girls, with the ratio ranging from 2 to 1 as much was 9 to 1 **(Rucklidge and Tannock, 2001).**

Attention Deficit/Hyperactivity Disorder and Ethnicity

Cultural environment may affect a child's behavior, but the differing attitudes of parents, clinicians, and society around the world towards acceptable behavior may also influence diagnosis. If assessment criteria could be consistently applied across different ethnic groups, the prevalence of ADHD would probably be similar **(Dwivedi and Banhatti, 2005).**

Influence of Rating Scales on Prevalence

Large variations exist in the reported rates of ADHD for different countries (table I and II), which likely reflect the difference in diagnostic schemes used. However, a review of 50 studies from around the world suggests that ADHD is at least as high in many non-US children as in US children (**Faraone et al, 2003**).

Table (I): Prevalence of ADHD in community (usually school) samples in different countries

Country	**Rate (%)**	***Note***	**Reference**
Japan	7.7	School; DSM-IIR	**(Kanbayashi et al, 1994)**
China	1.9 – 13	Range of studies	**(Li et al, 1989)**
	3.0	Primary school children; DSM-III	**(Tao, 1992)**
Israel	5.0	CTRS	**(Margalit, 1981)**
Italy	3.9 ("likely cases")	Fourth graders cases; DSM-III R	**(Gallucci et al, 1993)**
	6.9 ("possible cases")	CTRS	**(O'Leary et al, 1985)**
	12.0		
Spain	16.0	CTRS	**(Gingerich et al, 1998)**
Germany	8.0	CTRS	**(Gingerich et al, 1998)**
Iceland	5.7	School; DSM-IV	**(Magnusson et al, 1999)**

Scotland	4.5	CTRS	**(Gleeson and Parker, 1989)**
UK	16.6	DSM-III	**(Taylor et al, 1991)**
The Netherlands	9.5	DSM-III	**(Verhulst et al, 1985)**
Canada	5.8 (boys 9%, girls 3.3%)	Ontario, multiple checklists	**(Szatmari et al, 1989)**
USA	9.1 –12.0	DSM-III(4 studies)	**Studies reviewed by (Faraone et al, 2003)**
	7.1-12.8	DSM-IIIR (6studies)	
	11.4-16.1	DSM-IV (4studies)	
Columbia	16.0	Children in the general population; DSM-IV	**(Pineda et al, 1999)**
Brazil	5.8	School; DSM-IV	**(Rohde et al, 1999)**
Australia	12.0	Queensland; CTRS	**(Holborow et al, 1984)**
New Zealand	15.0	CTRS	**(Werry and Howthorne, 1976)**

Table (II): Prevalence of ADHD in clinic or other samples of children in different countries.

Country	**Rate (%)**	***Note***	**Reference**
India	7.5	Child Guidance Clinic; DSM-IV	**(Mukhopadhyay et al, 2003)**
	11.2	Hospital OPD; DSM-III	**(Bhatia et al, 1991)**
Israel	3.9	DSM-III-R in army inductees (16-17 years)	**(Zohar et al, 1992)**
Kenya	2.5	Nairobi Juvenile Court; ICD-10	**(Maru et al, 2003)**
Nigeria	1.1	Ibadan, paediatric primary care clinic; DSM-III R	**(Gureje et al, 1994)**
	5.0	Ibadan, child psychiatric clinic; DSM-IV	**(Omigbodum Omigbodum, 2002)**