

Attention Deficit/Hyperactivity Disorder: A Preliminary Study in the Nelson Mandela Metropole (SCIENTIFIC NOTE)

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ABSTRACT

The objective of the study was to determine the treatment and care of a group of primary school children diagnosed with Attention Deficit/Hyperactivity Disorder (ADHD) in the Nelson Mandela Metropole (NMM) during 2005. The study consisted of two questionnaire surveys and a health education talk. Firstly, a questionnaire was distributed to 876 parents of children attending a primary school in the NMM. A health education talk, based on the results of the survey, was thereafter presented to parents and teachers at the school. A second questionnaire was then distributed to parents whose children had been diagnosed with ADHD. The response rate to the initial survey was 13.0%. Most parents were interested to know more about the causes of ADHD and alternative treatments available. The talk on ADHD was attended by 75 parents and teachers. The second questionnaire was thereafter distributed and the response rate was 45.0%. Most children (83.3%) were male, with an average age of 9.6 (SD=1.9) years. Alternative treatments had been tried by parents to improve symptom control in their children, but the outcomes were unsatisfactory. A need for comprehensive studies on the treatment and care of children diagnosed with ADHD exists in South Africa.

Keywords: Attention Deficit/Hyperactivity Disorder (ADHD), Children, Nelson Mandela Metropole (NMM), Methylphenidate, Treatment, Drug utilisation, South Africa.

INTRODUCTION

Attention Deficit/Hyperactivity Disorder (ADHD) is a syndrome of developmentally inappropriate and socially disruptive behaviour beginning in childhood and is characterised by varying degrees of hyperactivity, inattention and impulsiveness.⁽¹⁾ Diagnosis of ADHD is made using the criteria specified in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV).⁽²⁾

Epidemiologic studies using standardised diagnostic

criteria suggest that 3% to 6% of the school-aged population may have ADHD.⁽³⁾ Some studies suggest that ADHD is diagnosed three to nine times more often in boys than in girls.⁽⁴⁻⁶⁾ This can be seen from the male to female ratios that range from 9:1 to 6:1 in clinical samples, but that are approximately 3:1 in community-based population studies.^(7,8) Various studies confirm the increasing trend for girls to receive pharmacotherapy for ADHD⁽⁹⁾ and that girls are being diagnosed more often than in the past.⁽⁴⁾ ADHD may persist into adolescence in about 85% of patients and into adulthood in as much as 31% of patients.^(5,7)

The exact percentage of people in South Africa using methylphenidate is unknown. Sales figures indicate that

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there has been a steady increase in the use of methylphenidate.^(5,6) A survey in KwaZulu-Natal, South Africa, in 1991 indicated that 1.65% of the pupils were using methylphenidate.^(5,6) Little published information, however, exists about the incidence, treatment and care of ADHD in South Africa. Since ADHD has an effect not only on the child or patient, but also on other family members and the schooling system. This preliminary study was conducted in an attempt to cast some light on this disease state. The primary aim of this study was therefore to investigate the treatment and care of a selected group of primary school children with ADHD in the Nelson Mandela Metropole (NMM).

METHODOLOGY

The study consisted of two questionnaire surveys at a primary school in the NMM during 2005. An initial questionnaire was distributed to 876 parents of children attending the primary school to determine the need for information on ADHD. The response rate was 13.0% (114 questionnaires). Based on these results, a talk on ADHD was presented.

Effective interventions for children with ADHD generally fall into three categories, namely behaviour modification, educational modifications and stimulant drug therapy. A second questionnaire, taking these interventions into account, was thereafter developed and a pilot study was done. This survey was conducted among the parents whose children had been diagnosed

and were receiving treatment for ADHD. Teachers identified children with ADHD and questionnaires were distributed to the parents of these children. Confidentiality was maintained by giving the questionnaire in a sealed envelope to the child to give to his or her parent. A total of 40 questionnaires were distributed to parents during June 2005, together with a consent form. The response rate was 45.0%.

Ethical approval for the study was obtained from the Ethics Committee of the Department of Pharmacy, Nelson Mandela Metropolitan University. The results of both surveys were quantitatively analysed using Microsoft Excel[®]. Basic descriptive statistics were calculated. Limitations included the small sample size and the fact that respondents were drawn from a limited geographical area.

RESULTS

Survey one: Information needs about ADHD

Only 27.2% of the respondents indicated that their child had been diagnosed with ADHD, yet 68.4% of respondents were interested in listening to a talk or information session about ADHD (see Table 1). Most parents were interested to know more about alternative treatments for ADHD. Other topics mentioned included diet, the necessity or not of drug holidays ("structured treatment interruptions" or medication-free periods), influence of treatment on growth, biofeedback and the effect of the undiagnosed ADHD child on the education system.

Table 1: Responses to survey one from parents with and without a child diagnosed with adhd

Items in questionnaire	Percentage (%)		All respondents	
	Parent with adhd child (n = 31)	Parent with non-adhd child (n = 83)	Total	%
Parents interested in listening to a talk?				
Yes	93.55	59.04	78	68.42
No	6.45	40.96	36	31.58
Topics to be covered during a talk:				
Definition of ADHD	22.58	37.35	38	33.33
Symptoms of ADHD	41.94	50.60	55	48.25
Medicinal treatments for ADHD	61.29	39.76	52	45.61

Items in questionnaire	Percentage (%)		All respondents	
	Parent with adhd child (n = 31)	Parent with non-adhd child (n = 83)	Total	%
	Alternative treatments for ADHD	87.10	54.22	72
Incidence of ADHD	22.58	32.53	34	29.82
Causes of ADHD	67.74	53.01	65	57.02
New treatments available	87.10	39.76	60	52.63
Other topics	25.81	2.41	10	8.77

Based on these results, a health education talk on ADHD was presented to a group of 75 interested parents and teachers.

Survey two: Treatment and care of children diagnosed with ADHD

The second questionnaire, distributed after the talk, was completed by 18 parents whose children had been diagnosed and who were receiving treatment for ADHD.

The children (patients)

The majority of the children (83.3%) were male, with an average age of 9.6 (SD=1.9) years and an average weight of 34.8 (SD=9.4) kg. The average age at which parents *suspected* that their child suffered from ADHD was 4.5 (SD=2.0; range: 1-7) years. The average age at which the actual *diagnosis* of ADHD was made was 6.2 (SD=0.7; range: 5-7) years.

Parents and family

The average age of the parents when their child with ADHD was born was 30.0 (SD=9.4) years for the fathers and 27.9 (SD=3.9) years for the mothers. The age of the mothers at the birth of the children ranged from 23 to 40 years. Parents noted that 61.1% of the births were difficult. Two children had fathers who had previously also been diagnosed with ADHD. In addition, eight other children had close relatives (for example, brother, cousin, nephew or an aunt) diagnosed with or suspected to have ADHD. Eight parents were taking medication for mood disorders, mostly antidepressants. Six of the parents

diagnosed with depression were the mothers and the average age at which they were diagnosed with depression was 30.2 (SD=10.2) years.

Medication

Methylphenidate was the most frequently prescribed medication for ADHD and all the patients started their therapy on methylphenidate (88.9% of the patients started on Ritalin®). Half of the patients underwent a dosage change after initiation of therapy. The main reasons for the dosage change were that the child needed a longer period of concentration than what was initially required and also that the side effects were too noticeable, therefore a dosage reduction was needed. The most significant side effects experienced were:

- 77.8% had a decrease in appetite after initiation of therapy, but only three children actually lost weight after starting therapy.
- 77.8% seemed to be forgetful.
- 61.1% noted that there were confrontations after initiation of therapy.
- 61.1% suffered from headaches once a week.
- 50.0% struggled to sleep, which can be the result of too high a dose of methylphenidate or that the last dose is given too late in the day.
- 38.9% noted that the children were aggressive.

The highest dose of methylphenidate was 36mg per day. Half of the patients went on “drug holidays” during weekends and school holidays; four patients went on drug holidays “sometimes”, while five patients did not go on drug holidays at all. Two-thirds indicated that they

observed changes in their child’s symptom control during these drug holidays.

Alternative products and/or treatments

Two-thirds had used alternative products and/or treatments. Most parents were of the opinion that these treatments helped initially, but that any improvement in symptoms was not sufficient to warrant stopping the methylphenidate. Parents were of the opinion that these

treatments were not as effective as pharmacological therapy, but that they have a place in therapy in combination with pharmacological treatment. The most often tried alternative treatments were the use of natural products (for example, Eye Q®, Biostrath® and Calmolin ADD®) and behavioural therapy (see Figure 1). Other alternative treatment options included remedial therapy, colour therapy, speech therapy, playing music at bedtime, music lessons and psychotherapy.

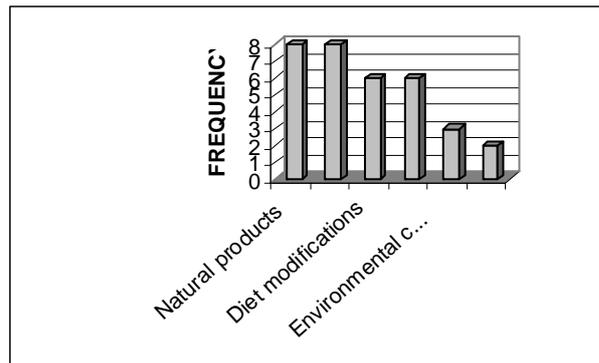


Figure 1: Alternative products and/or treatments used for ADHD

Behavioural effects

Five respondents indicated that their child had less than two close friends, and 61.1% indicated that their child had between two and four close friends.

DISCUSSION AND CONCLUSION

The incidence and treatment of ADHD is under-researched in South Africa. Little information is also available on the use and effectiveness of alternative medications, dietary modifications and neurobehavioural techniques. Treatment decisions should be guided by what is in the best interest of the child and what is acceptable to the family.

In the first survey, parents were the most interested to know more about alternative treatments for ADHD. A possible reason for this is that parents may have reservations about giving controlled substances to their children^(5,6) and are looking for alternative ways of treatment. Evidence indicates, for example, that fatty acid deficiencies or imbalances may contribute to several

common and overlapping childhood neurodevelopmental disorders, including ADHD.⁽¹⁰⁾

According to the literature, symptoms of ADHD need to be present before the age of seven years in order for a positive diagnosis to be made.⁽¹¹⁾ The average age at which the parents suspected that their child suffered from ADHD was 4.5 years. They were therefore aware from an early age that their child may suffer from ADHD. The actual diagnosis was only made at an average age of 6.2 years. Mothers’ age at the birth of the children with ADHD ranged from 23 to 40 years. Maternal age at birth is a strong predictor for the diagnosis of ADHD.⁽¹²⁾ Parents also noted that approximately 60% of the births were difficult.

A dose for methylphenidate for children under 6 years has not been established.⁽¹³⁾ Over 6 years, the recommended dose is initially 5mg orally twice daily, increased at weekly intervals, if necessary, to 20mg to 30mg per day.⁽¹³⁾ Growth in children using methylphenidate should be monitored (both height and

weight), especially if doses exceed 30mg per day for prolonged periods.⁽¹³⁾ In this study, 72.2% reported that their child did *not* appear shorter than their peers. Studies conducted over a 21-month period concluded that children with ADHD were on average 0.21 cm shorter than expected at the mean height of 145.6 cm and on average 1.2 kg lighter than the expected mean weight of 39.2 kg.⁽¹⁴⁾ Children on stimulant medication do not demonstrate bodyweight and height reduction into adulthood.⁽¹¹⁾ One way to attempt to minimise growth suppression is to go on drug holidays during school holidays in order to allow the body time to catch up.⁽¹¹⁾ Drug holidays are also recommended to determine the need for continued therapy.⁽¹³⁾ Half of the patients went on “drug holidays” during weekends and school holidays. The majority, however, indicated that they observed changes in their child’s symptom control during these drug holidays.

It has been said that children diagnosed with ADHD are the world’s most unsuccessful extroverts, implying

that they make friends easily, but lose them just as easily by trying to be too overbearing and possessive. Parents, teachers and children need to be educated about ADHD, its treatment and care. Although methylphenidate remains the mainstay of treatment for ADHD, newer and alternative products are available. Most parents have tried alternative treatments for their children, but were of the opinion that these treatments should be used in conjunction with pharmacotherapy. It was noteworthy that a high percentage of parents of ADHD-diagnosed children were using antidepressants.

The number of respondents in this study was too few to draw any definite conclusions. The findings, however, provided an insight into the information needs that exist about ADHD in South Africa as well as an insight into the treatment and care of a small sample of ADHD diagnosed children. It is recommended that more comprehensive studies on the incidence, treatment and care of children and adults diagnosed with ADHD be conducted.

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