

**GENERAL PRACTITIONERS' FAMILIARITY,
ATTITUDES AND PRACTICES WITH REGARD
TO ATTENTION DEFICIT HYPERACTIVITY
DISORDER IN CHILDREN AND ADULTS**

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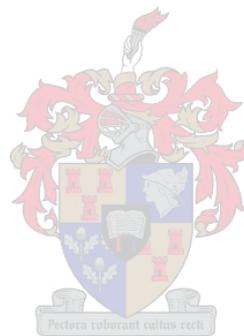
DECEMBER 2006

DECLARATION

I, the undersigned, declare that the work contained in this thesis is my own original work and that I have not previously, in its entirety or in part, submitted it at any university for the purpose of obtaining a degree.

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ABSTRACT

Attention-Deficit Hyperactivity Disorder (ADHD) is a common disorder affecting 4% to 5% of South African children. Recent studies revealed that 30% to 70% of children continue to experience problems related to ADHD in adulthood. Adults are becoming increasingly more aware of adult ADHD as a result of public awareness campaigns in the media. Their first line of action is to visit their family physician, but the question arises whether these practitioners are ready to take on the patients with ADHD. The aims of this study were to determine the familiarity, attitudes and practices of general practitioners in South Africa with regard ADHD in both children and adults and whether there are differences in children and adults with regard to depression and generalised anxiety disorders as comorbid disorders. The study also briefly explored the training models of general practitioners in South Africa. The research questions are addressed by means of a survey approach, using quantitative measures. An e-mail message with a cover letter, explaining the purpose of the research project, provided a link to a Web-based questionnaire. It was broadcast to 6704 general practitioners on the database of the company MEDpages, who managed the broadcast. A questionnaire attached to an e-mail message was sent to all Departments of Family Health at universities in the country to obtain information with regard to the training models of general practitioners. This was followed up with structured telephone interviews if no response was received. The questionnaire was completed by 229 respondents. The data were statistically analysed using Statistica Version 7.0. The results revealed a significant need among general practitioners to increase their knowledge base with regard to ADHD, more so with regard to adults. Their knowledge and training with regard to depression and generalised anxiety disorders were significantly more extensive with regard to adults as opposed to children. Training with regard to ADHD in adults was almost non-existent. It was recommended that the limited knowledge base of general practitioners with regard to ADHD should be addressed by adapting the curriculum of undergraduate medical students and providing opportunities for continued medical education that focus on the diagnosis and management of ADHD in both children and adults. General practitioners should acknowledge the educational psychologist as an equal partner within a multi-disciplinary team.

OPSOMMING

Aandagafleibaarheid-Hiperaktiwiteitsversteuring (AAHV) is 'n algemene versteuring wat onder 4% tot 5% kinders in Suid-Afrika voorkom. Onlangse studies het aangetoon dat 30% tot 70% van kinders steeds probleme wat gepaardgaan met AAHV in hul volwasse lewe ervaar. Volwassenes raak ook toenemend meer bewus van volwasse AAHV deur middel van die media. Die eerste persoon wat hulle gewoonlik nader met hul probleem is die huisdokter, maar die vraag ontstaan of die huisdokter voldoende toegerus is om hulle te behandel. Die doelstellings van hierdie studie was om die huisdokters in Suid-Afrika se bekendheid, houdings en praktyke ten opsigte van AAHV by beide kinders en volwassenes te bepaal en of dit verskil ten opsigte van kinders en volwassenes, ook ten opsigte van depressie en algemene angsversteurings as ko-morbiede toestande. Die studie het ook die opleidingsmodelle van huisdokters in Suid-Afrika verken. Die studie is met behulp van 'n vraelys ondersoek, wat 'n kwantitatiewe benadering verteenwoordig. 'n E-pos boodskap met 'n dekbrief, waarin die doel van die navorsingsprojek verduidelik is, het 'n verbinding voorsien met 'n Webgebaseerde vraelys. Dit is versend aan 6704 huisdokters wat op die databasis van die maatskappy MEDpages is. MEDpages het die versending hanteer. 'n Vraelys gekoppel aan 'n e-pos boodskap is aan die Departemente van Huisartskunde aan alle universiteite in Suid-Afrika gestuur. Dit is opgevolg met 'n gestruktureerde telefoniese onderhoud indien geen respons op die e-pos ontvang is nie. Die vraelys is deur 229 huisdokters voltooi. Die statistiese analise is met behulp van Statistica Weergawe 7.0 uitgevoer. Die resultate het op 'n beduidende behoefte onder huisdokters gedui om hul kennisbasis ten opsigte van AAHV uit te brei, veral met betrekking tot volwassenes. Hul kennis en opleiding ten opsigte van depressie en algemene angsversteurings by volwassenes was baie meer uitgebreid as by kinders. Opleiding ten opsigte van AAHV by volwassenes het feitlik nie bestaan nie. Dit is aanbeveel dat die huisdokters se beperkte kennisbasis ten opsigte van AAHV aangespreek word deur die opleidingsmodel aan te pas en om geleenthede te skep vir verdere mediese opleiding met die fokus op die diagnose en behandeling van AAHV in beide kinders en volwassenes. Die rol van die opvoedkundige sielkundige as gelyke vennoot in 'n multidissiplinêre span behoort ook onder huisdokters bevorder te word.

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This work is dedicated to my son

DOLPH

who inspired me with
his courage, endurance, resilience and inner strength
displayed during his many months of fighting cancer



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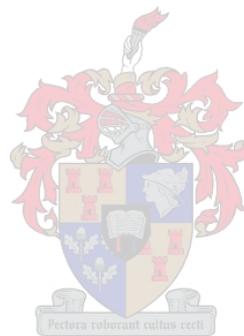
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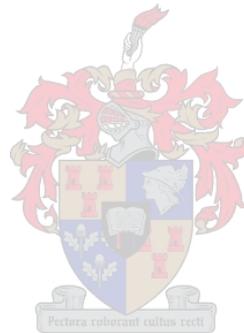
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CHAPTER 1

ACTUALITY, PROBLEM STATEMENT AND OBJECTIVES

"ADHD is a family splitting, society wrecking, life threatening force" John F Taylor (2004).

1.1 INTRODUCTION

Attention Deficit Hyperactivity Disorder (ADHD) is one of the most common psychiatric disorders which cause distress in the lives of both children and adults, as well as the lives of all other role players involved with these children and adults. It is estimated that approximately 3% to 5% of American children experience ADHD (American Psychiatric Association, 2000:90). This is congruent with studies done in South Africa, indicating that between 4% and 5% of children present with ADHD (Bräuer, 1991:36; Meyer, 1998:186). In the past, Attention Deficit Hyperactivity Disorder (ADHD) was considered to be a condition that presents itself only during childhood. Recent studies, however, suggest that between 30% and 70% of children with ADHD continue to have problems in adulthood (Resnick, 2000:19; Fischer & Barkley, 2006:230). According to Mash and Wolfe (2002:102-103) ADHD, a heritable disorder, is associated with three core features, namely inattention (which includes distractibility), hyperactivity and impulsiveness. Individuals who display these symptoms struggle to control their behaviour resulting in unwanted and often unacceptable behaviour patterns. During adulthood these symptoms can disappear or manifest differently (Resnick, 2000:19).

Considerable attention is devoted to this disorder in medical literature, books and the lay media. Because the disorder is so well known, Searight, Burke and Rottnek (2000:2077) argue that adults in distress, either about themselves or their children, and who learn about this disorder in the media, often turn to their family physician for help. This is confirmed by Steinhausen (2003:321) who reports that when people are made more aware of the disorder through the "wide popularization of the concept of

ADHD", their first line of action is to visit their family physician. This line of action is explicitly encouraged in an article in the Harvard Women's Health Watch (2003:3): "A good place to start is your primary care doctor." According to Bushnell, McLeod, Dowell, Salmond, Ramage, Collings, Ellis, Kljakovic and McBain (2005:631), the family physician is geographically and financially the most accessible health care provider. However, the question that is asked is whether the family doctor is sufficiently familiar with the complexities of this disorder to make a correct diagnosis and subsequently offer correct management. In South Africa, the questions that may be asked concern how familiar general practitioners in this country are with ADHD and what their attitudes and practices are with regard to this disorder in both children and adults. The primary purpose of this study is to explore these questions.

Chapter 1 commences by contextualising this study. This is followed by the research questions, a review of the key concepts, the paradigm in which this study is positioned and the research design. The chapter concludes with an outline of the study.

1.2 ACTUALITY AND CONTEXTUALISATION OF THE STUDY

In the last decade ADHD has been re-conceptualised as a possible lifelong disorder causing significant distress for the individual. A correct diagnosis is thus imperative and calls for a thorough assessment process. Both the DSM-IV Criteria (see Appendix A) and the Utah Criteria for ADHD in adults (see Appendix B) require a childhood history of ADHD with an onset before the age of 7 years (Weiss & Murray, 2003:715-716; Barkley, 1998:186). This situates ADHD in adulthood within the disciplinary framework of Educational Psychology. ADHD is known to be hereditary, which often implies that one or both parents of a child diagnosed with ADHD can also present with ADHD (Verbeeck, 2003:7). An editor's note by Catherine D. DeAngelis in the article of Kwasman, Tinsley and Lepper (1995:1211) highlights this:

With such a relatively high current prevalence rate, ADD (Attention Deficit Disorder) and ADHD must have occurred fairly frequently in prior generations when medication was not available. Do you ever wonder what happened to all those children – and their parents?

This confirms the relevance of the role of the educational psychologist, who needs to facilitate the management of the disorder in the family.

This study aims to contribute to a better understanding of the current role of the general practitioner in South Africa (with regard to children and adults with ADHD) as a member of the multi-disciplinary team, and also to highlight possible limitations that need to be addressed. Studies exploring the general practitioners' knowledge of ADHD are limited, internationally as well as locally (see Section 2.8 and Section 3.6.1.1 for more details on the local studies).

Venter, Joubert and Van der Linde (2003:12) conducted a study amongst general practitioners in the Free State province of South Africa. Their survey aimed to determine the knowledge, attitudes and practices of general practitioners regarding the management of ADHD. The focus was mainly to obtain information about the general practitioner's knowledge of the medical treatment of children with ADHD. The same questionnaire was later employed in a study amongst psychiatrists and paediatricians throughout South Africa (Venter, Van der Linde, Du Plessis & Joubert, 2004:11). Their study aimed at determining the knowledge, attitudes and current practices of psychiatrists and paediatricians, and then comparing the two groups. They found that psychiatrists and paediatricians are not commonly available in South Africa, especially in the rural areas (Venter *et al.*, 2004:18). This implies that the general practitioner, who is more available in rural areas, is probably the first to be consulted by individuals who present with ADHD. In view of this the researchers recommended that the curricula of general practitioners should be revisited to ensure that they are adequately equipped to manage children with ADHD (Venter *et al.*, 2003:17). A national survey conducted by Adler in the USA in 2003, which focused only on adults, set out to determine how comfortable primary care physicians are in diagnosing ADHD in adults (Adult ADHD Often Missed, 2003:19).

No studies could be located, nationally or internationally, that compared the general practitioners' familiarity, attitudes and practices of ADHD in childhood to that of ADHD in adulthood. The contribution of this study is thus the creation of a new body of knowledge in this research field. In addition, the present survey was conducted nationally and covered a much greater range of general practitioners with a

questionnaire that is largely different from the one used in the recent provincial research that was mentioned (Venter *et al.*, 2003).

The relevance of the study is also located in the importance of correct identification and treatment of ADHD in both children and adults. As ADHD has a detrimental influence on the individual's emotional, social and cognitive lives, early identification can enable interventions that can minimise long-term difficulties (Resnick, 2000:23).

Seen from an ecosystemic perspective, the general practitioner is one of the significant role players in a multi-disciplinary team with regard to the diagnosis and management of ADHD. The psychologist, the parents, the teachers and the family, as well as other professionals such as the psychiatrist, neurologist, paediatrician, occupational therapist, the physiotherapist and even the speech therapist, can also make an important contribution to the diagnosis and management of ADHD (Venter *et al.*, 2003:14).

In addition to the increased awareness of ADHD created by the media, parents and adults generally establish a relationship of confidentiality and trust with their general practitioners over years and they may feel more confident about discussing their feelings and problems with them. In their assessment it is important to differentiate between psychiatric conditions, bearing in mind that some psychiatric disorders accompany ADHD – major depression, generalised anxiety disorders and substance abuse in particular. This inevitably demands a thorough knowledge of disorders and other conditions (in both adults and children) that mimic ADHD when the practitioner has to make a differential diagnosis. Only then can he or she decide on the most effective management of the problem. An overlap of characteristics with other psychopathological conditions often leads to under-diagnosis, neglect or non-treatment (Rosca-Rebaudengo, Durst & Dickman, 2000:35). However, it is important that the correct diagnosis be made, because it aids the individual in understanding the disorder, which is a significant step in its effective management. Misdiagnosis or non-diagnosis can have devastating results for the individual (Rosca-Rebaudengo *et al.*, 2000:38).

The importance of a correct diagnosis by a general practitioner is also relevant when he has to decide whether or not he should refer a patient to a neurologist, a

psychologist, a paediatrician (in the case of children), or a psychiatrist, for example, who specialises in the assessment for ADHD. He could also decide to refer an individual to an appropriate support group (Could it be an attention disorder? 2003).

While research on ADHD in adults is still in a relatively early stage, family physicians most probably will be more familiar with ADHD in childhood and less familiar with the residual problems that could carry over to adulthood (Searight *et al.*, 2000:2077).

But are general practitioners ready to take on patients, in particular adults, with possible ADHD?

1.3 RESEARCH QUESTIONS

The primary question that inform this study are:

- How familiar are general practitioners in South Africa with Attention Deficit Hyperactivity Disorder and what are their attitudes and practices with regard to both children and adults?

The secondary questions of this study are:

- Do the general practitioners' familiarity, attitudes and practices with regard to ADHD differ in terms of children and adults?
- Do the general practitioners' familiarity and practices with regard to depression and generalised anxiety disorders differ from their familiarity and practices with regard to ADHD?
- What does the training of general practitioners with regard to ADHD, depression and generalised anxiety disorders entail in both children and adults in South Africa?

Thus, the objectives of this study are:

- To investigate how familiar general practitioners in South Africa are with respect to ADHD in both children and adults

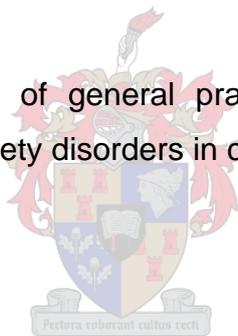
- To investigate what the attitudes of general practitioners in South Africa are with regard to ADHD in both children and adults
- To look into the current practices of general practitioners in South Africa in respect of ADHD in both children and adults
- To explore whether there are any differences between children and adults in the general practitioners' familiarity, attitudes and practices with regard to ADHD
- To explore whether there are any differences in the general practitioners' familiarity and practices with regard to ADHD, depression and generalised anxiety disorders
- To investigate the nature and extent of differences, where such differences exist
- To probe into the training of general practitioners with regard to ADHD, depression and general anxiety disorders in children and adults

1.4 RESEARCH DESIGN

1.4.1 Introduction

A research design can be seen as the structure or plan that guides the research process (Mouton, 2003:55; McMillan & Schumacher, 2006:22). The research design not only determines the end product, the kind of result aimed at, but it also provides the point of departure, the research question. It focuses, through logical planning of the process, on an outcome that will adequately address the research question (Mouton, 2003:56).

The point of departure in this study, and thus the research design, is the questions and objectives stated in Section 1.3. The research design was implemented by employing methods, techniques and procedures (research methodology) to address these questions and objectives (Mouton, 2003:57). The method employed in this study (a survey) is quantitative in nature and the study is situated in the postpositivist paradigm. The postpositivist approach is associated with objectivity, quantification,



experiments, causality and correlations (Mertens, 2005:8). For the postpositivist researcher only one reality exists which can only be partially known due to the limitations situated in the researcher and the "intractable nature of phenomena" (Guba & Lincoln, 2005:195). A more detailed discussion of the postpositivist paradigm is provided in Section 3.2 and Section 3.3).

1.4.2 Method

1.4.2.1 Literature review

The literature review aims at contextualising the research study. As the first step in an empirical study, it not only allows the researcher to locate his/her study within the bigger picture of what is known about the topic of the research but it also creates the opportunity for the researcher to engage critically with the literature (Henning, 2004:27; Mertens, 2005:88). According to Henning (2004:27) "the literature review is important when you explain your data as you have to show the relevance of your findings in relation to the existing body of literature". The literature review thus helps in answering the research questions.

1.4.2.2 Sample

The company MEDpages, who broadcast the survey, has a comprehensive database of general practitioners which is actively managed, expanded and maintained. At the time when this survey was conducted, they had the e-mail addresses of 6704 registered general practitioners nationally. McMillan and Schumacher (2006:125) view this kind of sample as "convenience sampling" and, although useful, consider that it limits the generalisation of the results of the study.

1.4.2.3 Procedure

In order to answer the research questions a survey was conducted to obtain quantitative data from general practitioners on a national level. An e-mail message composed of a cover letter (see Appendix E) was sent to all the general practitioners requesting the completion of the questionnaire. A link in the cover letter led the general practitioner to a web site (see Appendix F) containing the questionnaire. A short questionnaire (see Appendix K) with closed-ended questions was also

compiled and was sent as an e-mail attachment to all the Departments of Family Health Sciences at universities in South Africa to obtain information on the training of general practitioners in psychopathology, specifically ADHD. They were requested to return their completed questionnaires to the researcher as an e-mail attachment. A structured telephone interview was held with those who did not respond. More details with regard to the questionnaires and the covering letter will be discussed in Section 3.6.

1.4.3 Instruments

The web-based questionnaire was based on the questionnaires of previous, more or less similar studies, locally as well as internationally. A number of questions were selected from a questionnaire used by Venter *et al.* (2003, 2004) in their two studies conducted in South Africa. More questions were derived from a news report on a study performed by Prof Lenard Adler of the New York Medical Center and School of Medicine (Adult ADHD Often Missed, 2003). The current researcher also added a number of questions after an extensive literature view.

The study performed by Venter *et al.* (2003) explored the knowledge, attitudes and practices of general practitioners in the Free State province regarding the management of children with ADHD. A further study (Venter *et al.*, 2004) on a national level compared psychiatrists' and paediatricians' knowledge, attitudes and current practices regarding the management of children with ADHD. Adler's survey was aimed at determining how comfortable primary care doctors in the USA were about diagnosing ADHD in adults. Permission was obtained from both parties to use part of their questionnaires to compile a questionnaire for this study. Adler has not yet published his study, but he granted permission for information made available in the press release to be used.

1.4.4 Ethical considerations

Any researcher needs to consider the three basic ethical principles of beneficence, respect and justice when planning the research design of social scientific research (Mertens, 2005:33). This will also be taken into account in the survey conducted in the present research and will be discussed in Sections 3.5, 3.6 and 3.7.

1.4.5 Reliability and validity

It is not the intention of this research study to develop a questionnaire that measures the constructs of familiarity, attitudes and practices. It merely aims at exploring these components among general practitioners in South Africa. Reliability and validity could, however, be confirmed if the findings of the current study are congruent with the findings of similar studies, particularly those performed in the South African context. This issue will again be dealt with in Section 4.4.

1.4.6 Data analysis

The statistical analysis was affected using the Statistica Version 7.1 software. Percentages and mean scores were calculated for each question with regard to children as well as with regard to adults. Comparisons were made between children and adults. The ANOVA test was used for repeated measures analysis of variance on the Likert scale data. The McNemar test was used for two-level answers, e.g. yes/no answers. For answers on more than two levels the Stewart-Maxwell test was used. The Cronbach Alpha test was employed to determine the reliability and validity of the components of familiarity and attitudes.

1.5 REVIEW OF KEY CONCEPTS

To inform the research questions and aims it is necessary to clarify the key concepts employed in this study.

1.5.1 Attention Deficit Hyperactivity Disorder (ADHD)

According to the American Psychiatric Association (2000:90), ADHD depicts children who persistently demonstrate behavioural symptoms of inattention, impulsivity and hyperactivity that are not developmentally appropriate. As a child grows older the symptoms of ADHD may alter in quality and quantity. Some symptoms, like hyperactivity, usually improve, but attention problems stay the same or can become more disabling, depending on the demands placed on the individual in adulthood (Resnick, 2000:20).

1.5.2 Children and Adults

For the purpose of this study adults are considered to be persons who are 18 years and older. Connors and Jett (1999:6) consider young adults to be between the ages 18 to 22. Children will thus be considered as any person below the age of 18 years.

1.5.3 Familiarity

The Collins Cobuild English Language Dictionary (1991:514) defines 'familiarity' as follows: "If you are familiar with something, you know or understand it well." The Online Cambridge Advanced Learner's Dictionary (2006) describes 'familiarity' as "easy to recognise because of being seen, met, heard, etc. before" and as "a good knowledge of something".

For the purpose of this study both these definitions describe the meaning of the word, as it is used in this context, appropriately.

1.5.4 Practice

The definition of 'practice', as stated in the Collins Cobuild English Dictionary (1991:1124), is a good description of what is meant by this word as it is used in this study: "A practice is an activity or habit that you do regularly because it has become a custom or tradition". Within the medical context it is "the place where they (doctors) work, often with a group of other doctors, and where their patients go to see them" (Collins Cobuild English Language Dictionary, 1991:1124).

1.5.5 Attitude

'Attitude' is defined as "the way that you think and feel about something" (Collins Cobuild English Language Dictionary, 1991:81). The Oxford Illustrated Dictionary (1981:47) describes 'attitude' as "settled behaviour, as indicating opinion". The Online Cambridge Advanced Learner's Dictionary (2006) describes 'attitude' as "a feeling or opinion about something or someone". According to Mertens (2005:191) 'attitude' consists of three elements, namely affection ("How does a person *feel* about this?"), cognition ("What does a person *know* about this?") and action ("What is the person willing *to do* about this?"). In this study all three of these elements are assimilated in the questions.

1.5.6 General practitioner¹

In The Oxford Illustrated Dictionary (1981:348) a 'general practitioner' is described as "(work of) doctor who treat cases of all kinds". The Collins Cobuild English Language Dictionary (1991:630) uses the abbreviation GP for 'general practitioner' and describes it as "a doctor who does not specialise in any particular area of medicine, but who has a medical practice in which he or she treats all types of illness".

In the South African context a general practitioner has the lowest qualification (MBChB: Bachelor of Medicine and Bachelor of Surgery) compared to doctors who do postgraduate studies to qualify as specialists. General practitioners practice as family doctors.

A general practitioner functions on the same level as a primary care physician/doctor, as it is known in the UK (General Practitioner: From *Wikipedia*, The Free Encyclopedia, 2006).

1.5.7 Paediatrician

A 'paediatrician' is a doctor who specialises in children's disease and is known as a specialist (The Oxford Illustrated Dictionary, 1981:604; Collins Cobuild English Language Dictionary, 1991:1033; The Online Cambridge Advanced Learner's Dictionary, 2006).

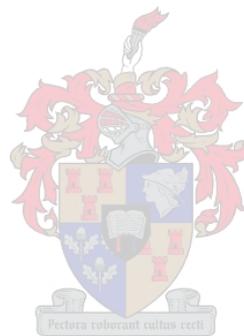
1.5.8 Psychiatrist

A 'psychiatrist' is described as a doctor who treats people suffering from mental illness (The Oxford Illustrated Dictionary, 1981:680; Collins Cobuild English Language Dictionary, 1991:1158). Plug, Louw, Gouws and Meyer (1997:298) defines a 'psychiatrist' in the South African context as a doctor with postgraduate training and qualifications in psychiatry (diagnosis, treatment and prevention of psychopathological conditions).

¹ A general practitioner is also referred to as a primary care physician/doctor in other countries.

1.6 OUTLINE OF THE STUDY

This chapter is followed by a literature review in Chapter 2. It provides an overview of the theoretical background and also focuses on theoretical perspectives on the etiology of ADHD. Prevalence and outcome, diagnosis and symptoms, associated features, assessment and management of ADHD as well as relevant research on ADHD will also be discussed. Chapter 3 describes the research design and methodology, also discussing the research paradigm and questionnaire. In Chapter 4 the results will be presented and discussed. Chapter 5 concludes the research study with a discussion of the conclusions based on the results, the limitations of the study and recommendations.



CHAPTER 2

THEORETICAL BACKGROUND AND LITERATURE REVIEW

2.1 INTRODUCTION

This chapter explores the conceptualisation of Attention Deficit Hyperactivity Disorder (ADHD). It begins by tracing the historical development and definition of the term ADHD. Next it explores the etiology of ADHD within the theoretical perspectives which have informed our understanding of ADHD. The chapter then discusses the prevalence, diagnosis, symptoms, comorbid disorders, assessment and treatment of ADHD in children and adults. An overview of research studies on this topic is then given. The chapter concludes with a reflection on the literature review. The purpose of this chapter is to provide the reader with the general frame of reference that informed the goals of this study and guided the exploration of the research problem.

2.2 THEORETICAL BACKGROUND OF ADHD

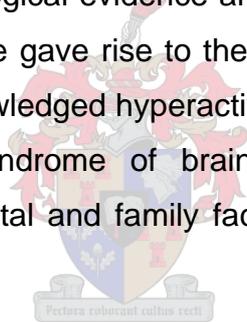
2.2.1 One hundred and forty years: Historical conceptualisation of ADHD

This historical overview of the development of ADHD traces the way the current conceptualisation of ADHD has been shaped.

ADHD was first described in 1865 by a German physician, Heinrich Hoffman, in a poem (Fidgety Phil). More scientific, extensive research was done by George Still at the beginning of the twentieth century when he described certain behaviours in children related to what we know today as ADHD. He attributed these behaviours to chronic "defective moral control" and "poor inhibitory volition" as a result of brain injury or neuronal cell modification (Resnick, 2000:3; Mash & Wolfe, 2002:99). In his view, ADHD could not be attributed to poor parenting or unfavourable environmental circumstances (Houghton, 2006:263).

In the next few decades brain damage was thought to be the underlying cause for this behaviour. This evolved into concepts of "minimal brain damage" and later "minimal brain dysfunction" by the middle of the century. A few scientists questioned the validity of brain damage as a causal factor as there were children who exhibited these behaviour patterns without any documented evidence of brain damage (Barkley, 2000:33; Mash & Wolfe, 2002:100). In 1957 investigations and subsequent writings by Laufer, Denhoff and Solomons (in Mash & Wolfe, 2002:100) suggested that these children had a Hyperkinetic Impulse Disorder where the brain of the child was overstimulated due to poor filtering of incoming stimuli. This view was, however, refuted by research findings of Barkley (2000:35-36). He found that children with ADHD were indeed able to filter the relevant from the irrelevant and were able to pay attention to the same things as children without ADHD do, but they experienced more difficulty sustaining this attentional effort compared to the other children.

A lack of observable and neurological evidence and growing dissatisfaction with the concept of minimal brain damage gave rise to the concept of the Hyperactive Child Syndrome in the 1960s. It acknowledged hyperactivity as a defining feature of ADHD and separated it from the syndrome of brain damage. It also rejected the psychoanalytical view that parental and family factors are to be blamed for ADHD (Barkley, 1998:6-9).



During the 1970s the conceptualisation of ADHD was significantly expanded as a result of the influential contribution of Virginia Douglas. She included other characteristic behaviours such as impulsivity, short attention span, low frustration tolerance, distractibility and aggressiveness. Her work led to the renaming of this disorder to Attention-Deficit Disorder (ADD) in 1980. This description shifted the focus from hyperactivity to difficulty maintaining attention and poor impulse control as the major features of this disorder. It was also during this period that the use of stimulant medication increased and the role of environmental factors (diet, environmental stimulation and excitation, cultural effects, poor child rearing practices) and behaviour modification techniques came into play (Barkley, 1998:10-17). Further improvement of the diagnostic criteria for ADD resulted in yet another more comprehensive renaming of this disorder to Attention Deficit Hyperactivity Disorder (ADHD) (Barkley, 1998:25).

Developments in the research of ADHD since 1990 were characterised by an increase in studies on the neurological (e.g. neuro-imaging) and genetic base of the disorder and a keen interest in adult ADHD (Barkley, 1998:35). For the past decade there has been, according to Tannock (2003) (in Houghton, 2006:265), "a shift from a reliance of purely clinical and descriptive approaches to the development of theoretical accounts of ADHD", such as the Attentional Network Model, the Cognitive Energetic Model, the Biologically-based Energetic Deficiency Model, Delay Aversion Theory and the Dual Pathway Model. A very recent model that has a significant influence on the current conceptualisation of ADHD is the Executive Attention Model of ADHD. This model emphasises the significance of executive functions "such as planning, organisation, inhibition, [and] working memory" (Houghton, 2006:265).

Although the work of scientists like Quitkin and Klein (1969), Morrison and Minkoff (1975), Wood, Reimherr, Wender and Johnson (1976) and Pontius (1973) (Barkley, 1998:18-20) created an awareness of the existence of ADHD in adults in the 1960s and 1970s, only since the 1990s has more extensive research been conducted on adult ADHD and its existence widely accepted (Barkley, 1998:37). Compared to the extensive research conducted on children with ADHD, Houghton (2006:269) argues that ADHD in adults is "under-researched". Further research on adult ADHD is, however, likely to increase over the next few years due to the pressure of the more informed public sector by extensive media coverage on the subject (Barkley, 1998:37).

2.2.2 Definition of ADHD in children and adults

A scientist's theoretical framework and his understanding of ADHD can shape his effort to define concepts. A review of the relevant literature revealed that although clinical professionals are more or less in general agreement on the definition of the symptoms of ADHD, they often differ on aspects such as etiology and management.

Children and adults with ADHD experience chronic difficulties with inattention and/or impulsivity-hyperactivity. Barkley refers to these three criteria as the "holy trinity" of ADHD (Barkley, 1998:57). The American Psychiatric Association defined these three subtypes of ADHD in the Diagnostic and Statistical Manual of Mental Disorders (2000:87) (see Appendix A), namely the predominantly hyperactive/impulsive

subtype, the predominantly inattentive subtype and the combined subtype with symptoms of the hyperactive/impulsivity/inattentive subtypes (Searight *et al.*, 2000:2078). According to Searight *et al.* (2000:2079) these criteria were, however, compiled for children and did not have adults in mind so they should not be rigidly applied to adults. Wender designed the Utah Criteria (see Appendix B) for ADHD in adults. Although it has been criticised by some professionals, it provides a better picture of the disorder in adults (Searight *et al.*, 2000:2080). This, and other models, will be discussed in more detail in Section 2.4.2.2.

Bräuer (1991:38) provided a comprehensive, synthesised definition of different scientists:

ADHD is a cluster of developmental symptoms characterised by an age and situationally inappropriate inability to focus and sustain attention; and/or impulsive response style; and/or unfocussed, excessive movement, restlessness and fidgetiness, severe enough to handicap the child's optimal motor, cognitive, social and/or emotional development at specific stages of life, spanning from childhood to early adulthood.

It should be remembered that this was written at the beginning of the era of greater awareness of ADHD in adults. Several consecutive studies have shown that this disorder extends further than mere "early" adulthood.

Barkley (2000:34) adds behavioural disinhibition to this definition as the most distinctive feature of ADHD. Resnick (2000:20) prefers to define ADHD in terms of four core symptoms, namely excessive inattention, impulsivity (with or without), hyperactivity and distractibility, as these are the behaviours most often observed and presented in the clinical situation.

More recently Olivier and Steenkamp (2004:47-48) provided a comprehensive definition of ADHD as a summary of various scientists' statements: "ADHD can be described as a chronic, neurologically-based, behavioural disorder that is characterised by developmentally inappropriate levels of inattention, hyperactivity and impulsivity, which interfere with normal social, academic and occupational functioning".

Because ADHD presents itself in a myriad of ways it complicates the definition of this disorder and inevitably leads to many controversies emerging in multiple, sometimes incompatible, etiological and theoretical perspectives.

2.2.3 Theoretical perspectives on the etiology of ADHD

2.2.3.1 Theoretical perspectives on the etiology of ADHD in children

According to Mash and Wolfe (2002:116) ADHD is "a complex and chronic disorder of brain, behaviour, and development whose cognitive and behavioural outcomes affect many areas of functioning. Therefore, any explanation of ADHD that focuses on only one cause is likely to be inadequate". Rafalovich (2001:414) takes a similar view: "The unraveling of any discourse, which culminates in its own loss of legitimation, is an example of 'the impossibility of an ultimate fixity in meaning'". Looking at the same phenomenon from different perspectives offers the opportunity to raise new questions (Mash & Wolfe, 2002:27). These statements prompt the discussion of the following perspectives on the etiology of ADHD.

2.2.3.1.1 The genetic discourse

A genetic component as a causal factor in ADHD is strongly supported by extensive research studies and acknowledged in a consensus statement by a Consortium of International Scientists (2002:97). They also maintain that thus far a single gene (DRD4) associated with ADHD has been isolated. Venter (2004) predicts that there will be a blood test to identify this gene within the next ten years. Further studies may well reveal other genes involved in this disorder.

The inheritability of faulty genes was supported by numerous studies on the occurrence of ADHD in biologically related families. Recent studies show that children of affected parents have a 57% chance of inheriting the disorder (Barkley, 1998:170). Rief views the hereditary factor as "the most common cause based on the evidence" (1998:14).

To determine whether or not a condition is hereditary, it can be approached in two ways: the incidence of a condition among family members can be examined and twin studies can be performed. In these studies, however, it is difficult to control for

environmental factors that family members share and which may influence the development of ADHD behaviour. This predicament can be addressed through twin and adoption studies. It was found that ADHD was far more prevalent among identical twins than in fraternal twins (Cooper, 1999:7). Twin studies suggest that the average heritability of ADHD can be as high as 80% and also revealed that environmental factors contributing to the traits of ADHD behaviour account for only 0% to 6% of this behaviour (Barkley, 1998:171-172). Genetic involvement in the etiology of ADHD was confirmed by studies conducted on adopted children where the incidence of ADHD symptoms was significantly higher in the biological parents of adopted children diagnosed with ADHD than in the adoptive parents (Barkley, 1998:170).

Recent studies by Levy, Hay and Bennett (2006:7) confirm the role of behaviour and molecular genetics in the heritability of ADHD. She not only emphasised the role of specific as well as additive genes, but also the family environment, unique traits of the individual and family dynamics in ADHD. This complicates the field of ADHD and raises even more questions, resulting in cross-disciplinary research on ADHD (Houghton, 2006:264).

2.2.3.1.2 The discourse on diet, allergy and lead

The debate on the relationship between hyperactivity and diet, artificial colorants, artificial flavourings and preservatives still continues despite scientific proof that these additives or foods play no significant role in the cause of ADHD symptoms. Numerous studies have shown that the popular belief that sugar causes ADHD is also unfounded. No evidence could be found that large doses of vitamins or minerals would alleviate the symptoms of ADHD (Barkley, 1998:75-77; Mash & Wolfe, 2002:118). Venter (2004) claims, however, that studies confirm the beneficial effect of the fatty acids omega 3 and 6.

Although it was found that individuals exposed to low levels of lead from the environment (dust, soil and paint) might be associated with ADHD symptoms, the lead levels in the blood or teeth of children diagnosed with ADHD were not significantly raised (Mash & Wolfe, 2002:118).

2.2.3.1.3 *The neurological discourse*

Although there are researchers and professionals who consider ADHD as an ideopathic disorder, many of the current researchers support the role of the neurobiology of the brain as an underpinning theory (Horacek, 1998:27-28). The neurological perspective currently dominates the study domain of ADHD strengthened by the support of numerous scientific and technological evidences of the involvement of a physical entity in the individual (Rafalovich, 2001:411).

(i) Neurophysiological and neurochemical factors

Biochemical tests done on samples of urine, blood, cerebrospinal fluid and plasma of children diagnosed with ADHD did not show any differences between these samples and those from children who had not been diagnosed with ADHD (Barkley, 1998; Zametkin & Rapoport, 1987 in Mash & Wolfe, 2002:118).

The root of a neurochemical cause is faulty neurotransmitter mechanisms. A neurotransmitting chemical, dopamine, is responsible for the transportation of a message from one neuron to the next. Research studies on children with ADHD have shown that the dopamine transporter (DAT1) and dopamine receptors (DRD4 and DRD5) related genes mutate cause a decrease in the level of dopamine (Barkley, 1998:172; Levy *et al.*, 2006:12). Dopamine is involved in the regulation of emotion and movement (Rafalovich, 2001:411) and selective focus (Horacek, 1998:42). Fisher (1996) (in Rafalovich, 2001:411) maintains that the executive functions of attention and impulsivity are the result of totally different chemical processes and that the neurotransmitters serotonin (strongly involved with impulsivity), epinephrine and norepinephrine (involving selective attention) also play a significant role in the chemical mechanisms. Appropriate medication has been found very effective in normalizing the brain chemistry and consequently the individual's behaviour. This in itself suggests a causal link to the neurochemical theory. According to Barkley (2000:66), however, this link has not been irrefutably proved. Rafalovich (2001:413-414) agrees with the latter statement. He contends that the positive results of medical treatment cannot validate the neurochemical etiology. He questions the reliability in diagnosis of ADHD and argues that there is still no test that confirms the existence of ADHD as an illness of the body. Rafalovich

is also sceptical about the validity of scans and states that they merely create the suspicion that ADHD results from a neurochemical dysfunction.

(ii) Neuro-imaging

The genetic and neurochemical underpinnings of ADHD are complemented by studies on brain structure, brain injuries and brain activity.

Neuro-imaging research by means of magnetic resonance imaging (MRI), computerised transaxial tomography (CT), positron emission tomography (PET) and electroencephalography (EEG) has revealed abnormalities in the prefrontal cortex, the basal ganglia and the right side of the cerebellum in 85% to 90% of children and adolescents with ADHD. They were found to be structurally smaller in individuals with ADHD than in children without ADHD (Kewley, 1999:177). The frontal areas in the brain are involved with control of activity level, impulsivity and attention (Barkley, 2000:7; Mash & Wolfe, 2002:119; Rief, 1998:14). Studies also revealed that these regions were characterised by less brain activity, a lower rate of glucose metabolism and a decreased blood flow in children diagnosed with ADHD as opposed to children without this diagnosis (Rief, 1998:15).

Brain injuries sustained, especially to the frontal part of the brain as a result of pre- and perinatal complications, trauma, diseases (e.g. meningitis), medical conditions (e.g. hyperthyroidism), toxins (e.g. maternal alcohol and nicotine), malnutrition or any other factors that impact on the central nervous system, could cause symptoms of ADHD (Rief, 1998:14; Barkley, 2000:65).

2.2.3.1.4 The neuropsychological discourse

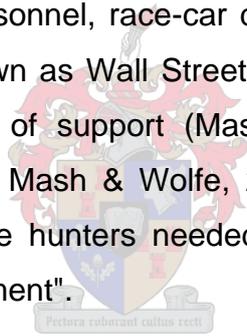
This discourse views impulsiveness as the core feature of ADHD and researchers have explored the role of a dysfunctional neuropsychological mechanism, located in the frontal lobes of the brain, in the inhibition of behavioural responses. Children with ADHD symptoms are characterised by an inability to inhibit responses (Cooper, 1999:4). This inability leads to subsequent difficulties in four major executive functions affecting efficient self-regulation, namely working memory (retaining and manipulating information), motivational appraisal (analysis and control of emotions),

internalised speech (self-control through internal self-talk) and reconstitution (process of planning of appropriate behaviours) (Kewley, 1999:181-182).

Other theories involve dysfunctional processes in the temporal lobes causing an "aversion to delay" in individuals and the "cognitive-energetic" model of ADHD, where the speed and accuracy with which the brain activates response processes are impaired (Cooper, 1999:5).

2.2.3.1.5 The evolutionary discourse

Studies done by Hartmann in 1993 link the characteristics of ADHD with that of the primitive hunter many years ago. He holds that the contemporary traits of ADHD were vital in the everyday living of the hunter: He had to make quick decisions (i.e. be impulsive) in order to survive. Hartmann holds that hunters are still seen in society today: "they can be found in large numbers among entrepreneurs, police detectives, emergency-room personnel, race-car drivers and, of course, those who stalk the high-stakes jungle known as Wall Street". This rather controversial theory has not received a great deal of support (Mash & Wolfe, 2002:114). Shelley-Tremblay and Rosen (1996) (in Mash & Wolfe, 2002:114) argue that rather than making quick decisions, primitive hunters needed "stealth, concentration, silence, and a keen sense of the environment".



2.2.3.1.6 The psychodynamic discourse

According to Rafalovich (2001:398) the etiology of ADHD symptoms of the psychodynamic narrative is embedded in the interaction between the child and his environment. This does not, however, deny the role of organic brain trauma in ADHD behaviour, but the emphasis with regard to the source of this behaviour is on the child's interaction with his environment and not on neurochemical dysfunction.

The psychodynamic perspective distinguishes between two facets, namely the psychoanalytical and the psychological (Rafalovich, 2001:398). The psychoanalysis sees behavioural symptoms as a demonstration of emotional states, caused by adjustment to a "basic phase of human development". Excessive motor activity, e.g. fidgetiness, or feelings of aggression would thus be considered as an over-compensation for anxiety which results from the psychosexual processes of

adjustment. Behaviour is driven by "compulsion neurosis", a psychoanalytic term referring to "a mental maladjustment in which children and adults alike felt compelled to repeatedly perform or refrain from particular actions" (Rafalovich, 2001:399-400). Psychological discourse also sees the resultant behaviour as secondary to a state of anxiety. The underlying cause of the anxiety is not attributed to compulsion neurosis, but to an inability of an individual to adjust to the systems within which they function, e.g. the school, family, work, etc. This discourse sees ADHD behaviour as a mechanism of survival, which over time crystallises into habits of conduct. These habits conceal the organic cause and the individual is unaware of these habits. Treatment will thus focus on revealing these habits to the individual and all others involved aiming at changing the behaviour. The focus of the psychologists is on the *reaction* to an organic cause and not the organic problem itself (Rafalovich, 2001:402-404).

Conners and Jett (1999:79) state that individual psychodynamic psychotherapy has been unsuccessful in treating childhood ADHD, because the ADHD characteristics of inattention and hyperactivity may hinder the clarification of inner thoughts and feelings. It might be useful in the treatment of adults with ADHD, especially the types of therapy that accentuates cognitive and behavioural modification. These authors also contend that psychodynamic theory does not offer an all-inclusive explanation for the source or management of ADHD (Conners & Jett, 1999:78).

2.2.3.1.7 The psychosocial and environmental discourse

Some argue that a failure by parents to regulate and manage their children's behaviour leads to hyperactive behaviour in their children by (Willis & Lovaas, 1977 in Barkley, 1998:175). Other researchers claim that parents who overstimulate their children or who have psychological problems themselves can cause ADHD in their children. These theories do not have much support in the literature. Explanation of ADHD behaviour in social terms is also refuted by studies on twins who share the same environment. These studies found that the shared environment contributed minimally to the expression of ADHD behaviour symptoms. However, researchers do acknowledge the contributory role of these psychosocial and environmental factors in the severity of the display of ADHD symptoms, the development of comorbid conditions in addition to the ADHD and the persistence of the disorder (Barkley,

1998:175-177). Low (1999) and Richer (1993) (in Olivier & Steenkamp, 2004:48) hold that if a child is genetically or neurobiologically inclined to ADHD, psychosocial factors can exacerbate the symptoms of ADHD.

2.2.3.1.8 The discourse of attachment theory

Attachment theory assumes that the nature of the bond established between a child and his or her caregiver during the early years of the child's life can predispose favourable or unfavourable accomplishment of normal and essential developmental tasks. If the attachment process is reciprocal with a responsive, available and affectionate caregiver, the bond established is viewed as a secure attachment. Failure to establish such a bond can result in an insecure attachment (Ladnier & Massanari, 2000:31-32). The nature of the attachment between a child and his or her caregiver has a regulatory effect on the behavioural and biological systems that are related to emotion. An insecure attachment would thus affect the individual's ability to regulate his emotions (Mash & Wolfe, 2002:213-214).

Supporters of attachment theory designed a developmental model to explain the etiology of ADHD. This model works on the premise that breaks in bonding can occur as a result of prenatal factors, inattentive caretakers, situational traumas and faulty parenting. These barriers to attachment result in deficits in self-regulation (e.g. impulse control, inhibition, perseverance and patience) and relating skills (e.g. empathy, trust, affection and respect), which in turn causes the emotional and behavioural symptoms of ADHD. Prenatal exposure to toxins (such as nicotine and alcohol), the stress hormone cortisol (released due to maternal stress), and the quantity and quality of positive interaction between the child and caretaker, affect the neurological development of the child. Situational traumas that occur preventing the formation of a secure attachment with the caregiver, such as premature birth, adoption or placement in foster care can cause symptoms of ADHD. Ineffective parenting and exposure to conflict, violence, abuse and criticism cause bonding breaks, which could lead to ADHD behavioural symptoms (Ladnier & Massanari, 2000:36-40).

2.2.3.1.9 *The discourse of social constructionism*

It is widely acknowledged that learning difficulties co-exist with ADHD and it is found in studies that up to 30% clients experience both ADHD and learning difficulties (Kewley, 1999:46). It is thus assumed that the social constructionist view of learning difficulties can also be applied to ADHD.

Social constructionist discourse views "learning and learning problems [as] dwell[ing] in activities and cultural practices situated in the context of social relations rather in the heads of individual students" (Gergen, 1990 in Dudley-Marling, 2004:482). Construction of the self is a continuous, mutual, meaning-giving and dynamic process of creation and re-creation influenced by the narratives of others and embedded in a set of cultural standards and specific situations. Construction of the meaning of learning difficulties involves interactional, relational and shared activities in different contexts. It does not exclude individualism, which is the dominant theme in the deficit discourse, but it is part of a multi-faceted system of interactions (Dudley-Marling, 2004:485). The student is not seen as a problem (a deficit discourse) and the teacher is not seen as a problem (an ecological discourse), but the problem (read ADHD) is viewed as the problem and the student is in an interactive relationship with the problem (read ADHD) (Dudley-Marling, 2004:488).

Cooper (1999:11-12) puts in a plea for a holistic approach (and not just a scientific approach) to ADHD and specifically for acknowledgement of the voices of human beings who live with the reality of ADHD on a daily basis. He warns that the human dimension should not be sacrificed in "sometimes abstract and reductionistic research". He does not brush the importance of such research aside, but emphasises the value of listening to the voices of human beings in the conceptualisation of ADHD as a means of positive human growth.

2.2.3.2 *Theoretical perspectives on the etiology of ADHD in adults*

Many professionals in the field agree that ADHD can extend into adulthood and that it commences in childhood (Resnick, 2000:12). Consequently, all the discourses discussed in 2.2.3.1 may apply to ADHD in adulthood.

Faraone (2000:33), however, addresses the validity of adult ADHD and refers to the debate between those who question its existence and those who view it as an "urgent clinical problem". Studies with regard to comorbidity, familial trends, psychopharmacology, neuropsychology and molecular genetics reveal variability, which suggests that the current debate on adult ADHD may be a result of how investigators devise diagnoses (Faraone, 2000:33-34). Debate arises when data are interpreted from very different theoretical perspectives. For this reason, Faraone (2000:36) suggests that research should focus on the validity of the theories that support the diagnosis. He also points out that the questions about the validity of adult ADHD will be answered if research focuses on the mechanisms responsible for the persistence of ADHD into adulthood in only some cases. Insights these studies could provide with regard to treatment could change the course of ADHD.

It seems as though most research on the etiology of ADHD has been done by researchers with a medical background as opposed to those by other professionals in the field. This could contribute to the dominating support for the neurobiological origin of this disorder. Nevertheless, the role of advanced technological development evidencing structural and chemical differences in the brains of people exhibiting the symptoms of ADHD cannot be denied (Horacek, 2000:27).

The many different perspectives that emerge in Section 2.2.3 emphasise the multi-faceted nature of human beings. Each human being attaches a different meaning to the nature of reality. It is determined by the angle from which the individual captures reality, inevitably resulting in multiple perspectives. For this reason, and according to the postpositivist paradigm within which this study is conducted, reality can never be fully known (Denzin & Lincoln, 2005:11). Ultimately no theory or perspective has the monopoly of the whole truth, but each one can be complementary to the other. Tait (2005:35) offers this perspective: "each theory can function as a truth within its own contextual framework".

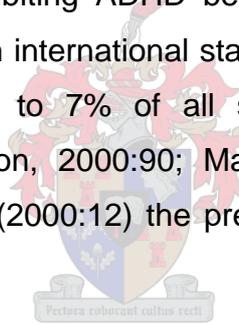
2.3 PREVALENCE AND OUTCOME

2.3.1 Prevalence

The literature review reflects conflicting statistics on the prevalence of ADHD in both children and adults. Conners and Jett (1999:4) attribute this to variations in study

criteria as well as the existence of both under-diagnosis and over-diagnosis. The clinical perceptions and symptom terminology of ADHD vary from country to country and from culture to culture. This hampers the comparison of international prevalence statistics for ADHD (Resnick, 2000:15). Kewley (1999:25) suggests that national differences in statistics may reflect real differences in incidence. He argues that in countries such as North America and Australia a higher incidence is due to the emigration factor, since in the past centuries, impulsive risk-takers were more likely to emigrate, and the probable higher incidence of ADHD was then passed on to subsequent generations. Rafalovich (2001:415) contends that the prevalence statistics are constantly changing as a result of the vagueness and variety of symptoms of this disorder and also due to the fact that the ideological interests of the researchers are reflected in the presentation of their research data.

Studies done in South Africa indicated the prevalence of approximately 4% to 5% of children in primary schools exhibiting ADHD behaviour (Bräuer, 1991:36; Meyer, 1998:186). This is congruent with international statistics. There is consensus among experts that approximately 3% to 7% of all school-age children have ADHD (American Psychiatric Association, 2000:90; Mash & Wolfe, 2002:111; Barkley, 1998:79). According to Resnick (2000:12) the prevalence of ADHD in adulthood is between 2% and 10%.



2.3.1.1 Gender

ADHD is diagnosed between two and six times more frequently in boys than girls. This can be ascribed to the possibility that girls present less frequently with the comorbid oppositional, overt and disruptive behaviour demonstrated by boys and might be more inclined to have the more covert, unidentified symptoms of inattention. This leads to later referral and under-diagnosis of girls (Mash & Wolfe, 2002:111; Kos, Richdale & Hay, 2006:148). The hyperactive behaviour in girls emerges as excessive talking and socialising (Resnick, 2000:17). The gender ratio decreases in adolescence (Mash & Wolfe, 2002:111) and is almost non-existent in adult referrals, perhaps due to the fact that women now have a higher prevalence of anxiety and depressive disorders which mask underlying and under-identified ADHD (Asherson & Kooij, 2004:5). Resnick (2000:18) also maintains that women are more inclined to seek treatment than men.

In a study conducted by Rucklidge (2006:59) on the neuropsychological functioning of adolescents with ADHD it was established that there was no difference between males and females with regard to cognitive functions such as naming and processing speed, working memory, interference, etc. Males, however, performed better with regard to spatial span and spatial memory. Males were slightly less efficient at the naming of colour words. In general this study revealed minimal gender differences regarding executive functions (2006:61).

In their cross-cultural study of ADHD-like behaviour in South Africa, Meyer, Eilertsen, Sundet, Tshifularo and Sagvolden (2004:133) found that differences with regard to gender and age are the same for all language groups. They also found that, similar to the Western studies, the differences between male and female decrease as the children grow older. In another local study conducted by Olivier and Steenkamp (2004:52), it was found that the boy/girl gender ratio was 9:1. According to these researchers, this is congruent with other epidemiological studies.

2.3.1.2 Ethnicity

Studies done in the United States found that ADHD symptoms were viewed and rated differently in different cultures. Factors such as ethnic status, social class and the expectation of teachers and students reflect variations in the perception of ADHD. It seems that the role of ethnicity and socioeconomic status should be further researched in order to provide satisfactory services to minority ethnical groups (Gringerich *et al.*, 1998 in Resnick, 2000:16-17). Crijnen, Achenbach and Verhulst (1999 in Meyer *et al.*, 2004:132) have found that there are indeed differences in prevalence across different cultures as well as sub-cultures. Their study has also shown that "factors such as religion, social class, parental education and school failure" play a determining role in the differences in prevalence. Mash and Wolfe (2002:112) ascribes cultural differences in prevalence, which vary from country to country, to differences in cultural values and lenience towards ADHD-like behaviour.

In a study done in South Africa it was found that there were insignificant differences in terms of the incidence of ADHD between the different South African cultures. It also revealed that the differences between the South African and other "Western" cultures were minimal (Meyer *et al.*, 2004:131-132).

Resnick (2000:19) states that the status of ethnic minorities relates to lower socio-economic status.

2.3.1.3 Socio-economic status

Many factors related to socio-economic status were found to impact on ADHD. Risk factors such as unemployment, limited mental and physical health care, high frequency of substance abuse and divorce can make children more vulnerable to ADHD. These factors cause stress, which is one of the risk factors for ADHD (Resnick, 2000:19). This presents a different view from the research quoted by Taylor (in Bräuer, 1991:70) that disrupted family relationships rather than socio-economic factors correlate with the incidence of ADHD.

In South Africa, with its diverse cultures and socio-economic groupings, studies may yield the same results. The high incidence of child abuse currently featured in the public media in South Africa raises questions about the stress it causes, putting children at high risk for ADHD.

2.3.2 Outcome

ADHD originates in childhood by the age of three to four years of age when children present with symptoms of hyperactivity/impulsivity. Symptoms of inattention usually emerge during the first few years of schooling when there is a greater demand for sustained attention. At least 50% of these children continue into adolescence and although the symptoms can become more severe due to hormonal changes during this developmental stage, hyperactive/impulsive behaviour usually decreases significantly (Mash & Wolfe, 2002:113). Excessive gross motor activity becomes more subdued and presents as fidgetiness and a feeling of restlessness (American Psychiatry Association, 2000:89).

Longitudinal studies of children diagnosed with ADHD and followed through into early adulthood revealed that approximately two-thirds of these children still presented with symptoms related to ADHD, which suggests a prevalence of at least 1% of ADHD in adults (Asherson & Kooij, 2004:2). Other studies provide similar results. McGough and Barkley (2004:1948) maintain that longitudinal studies provide evidence that 58% of childhood ADHD continues into adulthood when defined in

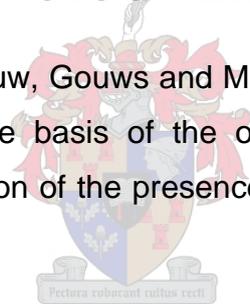
terms of the DSM-IV-TR criteria and parental reports. Research done in North America suggests that 50% to 65% of children continue into adulthood with symptoms of ADHD (Weiss & Hechtman, 1993 in Barkley, 1998:201) while studies in China put the figure at 70% (Wenwei, 1996 in Barkley, 1998:201).

Weiss and Murray (2003:715) confirm that ADHD is now recognised as a lifelong disorder, but mention that a realistic estimation of the prevalence of ADHD in adults is compromised by a lack of large scale epidemiological studies. They consider a prevalence of 2% of adults with ADHD as a conservative estimate. According to Toner, O'Donoghue and Houghton (2006:248), in 30% to 70% of children with ADHD the ADHD symptoms persist in adulthood.

It should also be noted that the problem of underdiagnosis and misdiagnosis of ADHD in adults can impact on the prevalence rate.

2.4 DIAGNOSIS AND SYMPTOMS OF ADHD

Diagnosis is defined by Plug, Louw, Gouws and Meyer (1997:52) as the determining of a disease or disorder on the basis of the observed symptoms. Symptom is described as any sign or indication of the presence of a disease or psychic disorder (1997:337).



The general practitioner is one of the main role players in the multi-disciplinary team diagnosing and managing ADHD in children and adults. As was argued in Section 1.1, he or she is often the first in the line of professionals involved (Steinhausen, 2003:321; Bushnell *et al.*, 2005:631), more so with regard to adults. The question arises whether general practitioners feel adequately equipped to make such a diagnosis (which is one of the questions of this study). This task could be easier when he or she is confronted with diagnosing ADHD in children, because ADHD is better known in children and there are more active and involved role players (e.g. parents, teachers, psychologists, occupational therapists, etc.) who could support the general practitioner in this process. Diagnosing ADHD in adults could be more difficult, because it is much less known and the general practitioner has only the patient to rely on for information on symptoms and retrospective information, which is a subjective report.

The diagnosis of ADHD is aimed at determining, planning and monitoring treatment, and linking treatment with prognosis (Conners & Jett, 1999:9).

2.4.1 Diagnosis and symptoms of ADHD in children

ADHD has three core features, namely inattention, hyperactivity and impulsiveness. In order to enhance conceptualisation of ADHD Resnick (2000:20) prefers to add distractibility as a fourth core symptom. Mash and Wolfe (2002:102), Kewley (1999:34) and Barkley (1998:58) consider distractibility to be part of the core symptom of inattention.

Accardo and Blondis (2000:11) are concerned with the tendency to ignore the symptom of inconsistency:

After one tabulates all the various symptoms that can occur in attention deficit hyperactivity disorder, one striking characteristic that eludes many checklists is inconsistency, a marked day-to-day variability that produces an unpredictability in the child's behaviour and performance that frustrates many teachers and parents.

The symptoms of ADHD change as the child develops and is confronted with different developmental tasks (Barkley, 2000:90). The symptoms also fluctuate across various settings and caregivers. If a situation is less restrictive and less demanding, there is less display of typical ADHD symptoms (Barkley, 2000:97; Olivier & Steenkamp, 2004:48).

2.4.1.1 Primary symptoms

- *Inattention*

Concentration is the supreme art because no other art can be conceived without it – whilst with it anything can be achieved"
(W Timothy Gallwey in Kewley, 1999:32).

Attention is a "selective, goal-directed perception" and a deficit in attention is a hallmark of ADHD (Accardo & Blondis, 2000:4). The inattentive individual finds it difficult to sustain attention, makes careless mistakes, fails to give close attention,

does not seem to listen when spoken to, struggles to complete tasks, may be forgetful and often loses things (Kewley, 1999:32-34). Resnick (2000:21) also mentions that these persons quickly get bored with a task, they daydream, exhibit poor time management, are disorganised and tend to withdraw from social situations because of poor social skills. They feel overwhelmed and stressed and this can lead to depression.

According to Olivier and Steenkamp (2004:48), the role of motivation as an underlying factor in attentional behaviour in children with ADHD suggests that

ADHD behaviour has a significant impact on the person's motivation, especially regarding poor regulation of arousal states, an inability to maintain readiness for action in the face of frustration, a performance goal orientation, an external locus of control, low perceived self-efficacy, low perceived competence in the scholastic and behavioural domains, impaired self-regulation and goal-directed persistence and abnormally high reward thresholds.

- *Hyperactivity*

Hyperactivity is characterised by more overt motor activities like running, climbing and excessive talking, but it can also be more subtle in the form of fidgetiness (Mash & Wolfe, 2002:103). Hyperactivity is not displayed by all individuals suffering from ADHD (Resnick, 2000:22). It is estimated that about 30% of children have never been hyperactive. Absence of hyperactivity does not, however, rule out a diagnosis of ADHD.

Gender seems to play a role in hyperactivity. Girls who are hyperactive are less aggressive and display more emotional outbursts and mood lability than hyperactive boys. Hyperactivity in the preschool child may also be seen as normal developmental high energy levels and can as such mask hyperactivity. Mothers also often report hyperactivity at a prenatal stage. Not all children seem to experience sleep problems, which is often considered as an obstacle in many hyperactive children. Studies have also revealed that hyperactivity seems to decrease as the child grows older (Kewley, 1999:36-37).

- *Impulsiveness/Behavioural Disinhibition*

Impulsivity is a more or less chronic tendency to act spontaneously and directly without taking the consequences into account (Plug *et al.*, 1997:154). Milich and Kramer (1984 in Mash & Wolfe, 2002:104) distinguish between cognitive and behavioural impulsivity. Cognitive impulsivity is characterised by "disorganisation, hurried thinking and the need for supervision". Children exhibiting behavioural impulsivity, which predicts antisocial behaviour, tend to blurt out unsuitable remarks, act before thinking, find it difficult to wait their turn and make careless mistakes. They may even fail to recognise the dangerous consequences of their behaviour and put themselves at risk by exhibiting reckless behaviour. Failure to inhibit or control behaviour is also a hallmark of ADHD (Barkley, 1998:59; Mash & Wolfe, 2002:103).

The hyperactivity-impulsivity feature enables a professional to distinguish children with ADHD from children who have other disorders and from children not presenting with any disorders (Halperin, Matier, Bedi, Sharma & Newcorn, 1992; Roberts, 1990 in Mash & Wolfe, 2002:104).

2.4.1.2 Diagnostic criteria for children

An individual who exhibits all of these symptoms does not necessarily have ADHD. All individuals exhibit some of these symptoms in the course of normal development. To make a diagnosis of ADHD, it is necessary for professionals to weigh the behaviour patterns against a set of diagnostic criteria such as the criteria in the DSM-IV-TR (see Appendix A) (Resnick, 2000:22, Mash & Wolfe, 2002:104). Olivier and Steenkamp (2004:56, 58) state that children with allergic reactions may exhibit ADHD-like behaviour resulting in an incorrect diagnosis of ADHD. They recommend that parents should have allergy tests done to eliminate factors that could cause problem behaviour. It is important that general practitioners are also knowledgeable about these criteria in order to make a correct diagnosis.

2.4.2 Diagnosis and symptoms of ADHD in adults

There is general agreement amongst clinicians that adult ADHD has its roots in childhood and can continue into adulthood. This implies that the diagnostic features of adult ADHD can be similar to those of children. However, as an individual grows

older the symptoms of childhood ADHD change in quality and quantity, and they might manifest differently in adulthood. Some symptoms may even disappear, but others may become more disabling (Resnick, 2000:19-20; Barkley, 1998:201). Persistence of childhood symptoms is one of the key features to look for when an adult is assessed for ADHD (Asherson, 2005:3). Conners and Jett (1999:19) point out that adults with ADHD experience an important change in executive functions characterised by an increase in cognitive impairments. The awareness of cognitive impairments may be related to an increase in cognitive demands in adulthood. The related symptoms include being disorganised, losing things, failing to plan ahead, depending on others for maintaining order and not being able to get started on tasks.

Adults with ADHD often have marital problems, frequently change jobs, lose their jobs, are attracted to exciting and risky occupations, have poor social skills, are often involved in unstable relationships, isolate themselves, drive dangerously, are often involved in serious motor accidents, smoke cigarettes, use drugs and alcohol and are at an increased risk of poor medical health (Weiss & Murray, 2003:716). Adults diagnosed with ADHD as a child, more specifically the hyperactive type, are more involved in traffic offences and other antisocial activities such as theft, assault, disorderly conduct, carrying of a weapon, etc. (Barkley, 1998:207).

2.4.2.1 Symptoms

- *Inattention*

Deficits in sustained attention and concentration are symptoms that can become very disabling in adult ADHD due to increased responsibility in adulthood (Searight *et al.*, 2000:2079). An inability to sustain attention may lead to an inability to persist with jobs that are boring, to complete tasks, to read or follow instructions, to keep commitments undertaken, to organise tasks and to manage time effectively. These individuals tend to misplace and lose things, to procrastinate and they are forgetful (Asherson, 2005:4).

Individuals with ADHD commonly report the experience of having endless and uncontrolled mental activity. They complain that their minds are "foggy" and constantly busy with thoughts that are unclear, unfocused and distracting one

another. They report finding these processes exhausting prohibiting them from having a relaxed, quiet mind. This can also lead to insomnia (Asherson, 2005:7).

- *Hyperactivity*

As overt hyperactivity starts to decrease in the adolescent years it mainly manifests in an inner feeling of restlessness and fidgetiness, indicated, for instance, in shaking of knees, tapping fingers or feet or frequently changing positions during the adult years. Adults with ADHD find it difficult to remain seated in meetings and conferences and may talk excessively. They may resort to clowning or finding ways to dominate conversations (Asherson, 2005:4).

- *Impulsivity*

Impulsivity in adults may result in unsuitable remarks, emotional outbursts, reckless behaviour, gambling, drug and alcohol abuse and "binge buying". They may find it difficult to interpret non-verbal language of others around them or they may become verbally abusive, impatient, irritated and easily frustrated (Resnick, 2000:22). Adults with ADHD tend to interrupt other or invade the personal space of others without discretion. They demonstrate social clumsiness (Asherson, 2005:4).

Toner *et al.* (2006:249) conducted a study within an interpretivist paradigm with ten adult males clinically diagnosed with ADHD by a psychiatrist during adulthood and undiagnosed as children. They were interviewed individually on how they experienced ADHD as adults. The researchers condensed their findings in five categories, with subcategories in each. The current researcher summarised the results of this study in the following table:

Table 2.1 Experiences of adults diagnosed with ADHD

<p>Category 1</p> <p>CHAOS</p> <p>Explores and analyzes reasons for chaos</p>	<p>Symptoms</p>	<p><u>Inattention</u>: Losing thread of conversation, lack of organisational skills, inability to manage time, Losing items, Unfinished tasks</p> <p><u>Hyperactivity</u>: Difficult to sit still, involved in sports, need to be outdoors</p> <p><u>Impulsivity</u>: Reckless acts, Inability to curb tongues, Unfortunate ways of verbalizing, interrupting/intruding on others</p>
	<p>Comorbidities</p>	<p>Specific learning disability, obsessive behaviours, diagnosed with depression</p>
	<p>Academic underachievement</p>	<p>Failure at school, inconsistency performance, brief periods of excellence</p>
	<p>Social isolation</p>	<p>Feeling different, feeling alienated from their own children because of "out of control" behaviour</p>
	<p>Lack of fit in the workplace</p>	<p>Changing employment frequently, Searching for excitement, Being fired due to lack of organisational skills, overfocusing on unimportant matters, not meeting deadlines, personality clashes</p>
	<p>Lacking self-esteem</p>	<p>Failures, Extremely self-conscious and shy</p>
<p>Category 2</p> <p>SEEKING CONTROL</p> <p>Strategies employed to deal with condition</p>	<p>Exercise and outdoor activities</p>	<p>Needing to "burn off" excess energy, restlessness controlled when in touch with nature, Engaging in sport activities</p>
	<p>Seeking medical treatment</p>	<p>Only one member informed by GP of possibility of ADHD, others "stumbled" upon condition</p>
<p>Category 3</p> <p>GAINING CONTROL</p> <p>How control is achieved</p>	<p>Diagnosis and awareness</p>	<p>Huge relief when diagnosed, Given hope, Knowledge brings self-acceptance and modifications</p>
	<p>Benefiting from medication</p>	<p>Stimulant medication relieved restlessness, anxiety and depression</p>
	<p>The significant adult and the coach-wife</p>	<p>Significant others play huge role</p>
	<p>Success at work</p>	<p>Better leaders, Self-employment most suitable</p>
<p>Category 4</p> <p>LOSING CONTROL</p> <p>Causal factors</p>	<p>Dissatisfaction with medical treatment</p>	<p>Feeling of dissatisfaction with doctors contributes to loss of control again.</p>
	<p>Grieving for "the lost years"</p>	<p>Sadness about label, Regret about late diagnosis and lack of treatment</p>
	<p>Risk-taking behaviours</p>	<p>Motor car racing, Dangerous driving, License suspensions</p>
	<p>Self-medicating</p>	<p>Substances, Cigarette smoking, Alcohol abuse</p>
	<p>Overload</p>	<p>Unable to adjust to added pressures</p>
<p>Category 5</p> <p>THE DOUBLE LIFE</p> <p>Oscillation between chaos and control</p>	<p>The stigma</p>	<p>Kept diagnosis a secret with detrimental effects</p>
	<p>"Winging it"</p>	<p>Appeared to cope, but pretending to cope</p>
	<p>The Dual Personality</p>	<p>The "demon inside" sometimes takes over</p>
	<p>Pretending to be OK</p>	<p>Putting on a "brave face", causing anxiety</p>
	<p>The cycle</p>	<p>Cycle of high and lows, Downward spiral</p>

Adapted from Toner *et al.* (2006:251-259)

2.4.2.2 Diagnostic criteria for adults

As ADHD in adults has its roots in childhood ADHD the diagnostic criteria in the DSM-IV-TR (see Appendix A) can also apply to adults. However, the appropriateness of these criteria has been questioned by several clinicians as they do not accommodate the clinical complaints expressed by adults with ADHD. It has also been argued that the "cutoff point" for children should not be the same for adults because adults develop coping skills for some of the symptoms and other symptoms become more intense. This prompted the compilation of other diagnostic criteria for ADHD in adults such as the Wender Utah Criteria (see Appendix B) and the Hallowell and Ratey Criteria (see Appendix C). These two sets of criteria are extensively used by researchers and practitioners in the field (Resnick, 2000:51).

The main difference between the two sets of criteria is the exclusion of hyperactivity in the Hallowell and Ratey Criteria. They argue that their clinical experience revealed that many individuals, particularly women, presented with no history of hyperactivity. Although the Utah approach to adult ADHD acknowledges the need for retrospective childhood diagnosis, it is more restrictive in the sense that it fails to identify individuals with predominantly inattentive symptoms. The DSM-IV-TR criteria also accommodate a diagnosis of individuals with the primarily inattentive ADHD subtype, but they do not allow developmental variations in symptom expression (McGough & Barkley, 2004:1953). Unlike the Hallowell and Ratey Criteria, Wender's Utah Criteria do not include symptoms that the DSM-IV-TR would list under "Associated Features" (Resnick, 2000:52-53).

ADHD is not just about a problem-centred perspective. Rief (1998:21) provides a refreshing look at people with ADHD by listing a number of positive traits often associated with ADHD:

Energetic, highly verbal, spontaneous, creative, exciting, persistent, innovative, imaginative, risk-taker, tenacious, warm-hearted, ingenuity, compassionate, accepting and forgiving, inquisitive, resilient, fun to be around, sensitive to needs of others, resourceful, empathetic, good-hearted, gregarious, not boring, often high intelligence, humorous, outgoing, willing to take a chance and try new things, good at

improvising, have an interesting perspective, are able to find novel solutions, inventive, observant, full of ideas and spunk, caring, helpful, can think on their feet, good in crisis situations.

Every case of ADHD is unique and this can create a huge challenge for professionals in making a differential diagnosis. As general practitioners are often in the frontline of referrals of adults with suspected ADHD (Steinhausen, 2003:321), it is important for them to be familiar with the criteria for adult ADHD as well as the criteria for the most common comorbid disorders (which will be discussed in the next section). A lack of knowledge could lead to under- or misdiagnosis. The patient can reap the benefits of appropriate treatment if the diagnosis by the general practitioner is correct. In their study Toner *et al.* (2006:254) noted that only one of the participants was informed by a general practitioner that he might present with ADHD. The other participants "stumbled upon their ADHD condition" by learning about the condition when their children were diagnosed with ADHD or recognizing themselves, when reading an article in a magazine or through friends (who have children diagnosed with ADHD) informing them of the possibility of having ADHD. Some were told by their general practitioners that there was "no such thing as ADHD". This meant that a diagnosis was postponed and that the person became even more resentful towards the medical profession (Toner *et al.*, 2006:256).

Pectora cobruncant cultus recti

2.5 ASSOCIATED FEATURES AND COMORBID DISORDERS

Perrin and Last (1995 in Kirby *et al.*, 2005:123) describes comorbidity as "the co-occurrence of two or more disorders, which can present simultaneously or sequentially".

2.5.1 Associated problems and comorbid disorders in children

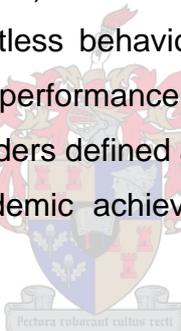
2.5.1.1 Associated problems

A child diagnosed with ADHD is very likely to have other comorbid (co-existing) conditions, which often mask the underlying ADHD. Not all children with ADHD display these conditions, but they exhibit them in a higher degree than expected in normal children. When these features are present, they are not necessarily evidence of ADHD, but a diagnosis of ADHD is not ruled out when they are not present

(Barkley, 1998:97). The associated features commonly displayed by children with ADHD are cognitive deficits, speech and language difficulties, interpersonal problems, task and situational factors and medical and physical problems (Mash & Wolfe, 2002:106).

- *Cognitive deficits*

ADHD children experience difficulties with executive functions with regard to cognitive processes (e.g. planning, flexibility and organisation), language processes (e.g. verbal fluency, communication and the use of self-directed speech), motor processes (e.g. response inhibition and motor coordination and sequencing) and emotional processes (e.g. self-regulation of arousal level and mature moral reasoning). Although most of the children with ADHD have normal and even above normal intelligence, they struggle to apply their intelligence, not realizing their full potential (Mash & Wolfe, 2002:106). As a result of their ADHD symptoms of inattention, impulsiveness and restless behaviour in the classroom these children find academic achievement and performance very difficult. Many of them also struggle with specific learning disorders defined as a significant discrepancy between general mental abilities and academic achievement (Barkley, 1998:99; Mash & Wolfe, 2002:106).



- *Speech and language development*

It is found that 30% to 60% of ADHD children experience speech and language impairments (Baker & Cantwell, 1992; Cohen *et al.*, 2000 in Mash & Wolfe, 2002:107). While many studies found there was delayed speech onset, other studies could not confirm this. ADHD children also have problems with expressive language, but their receptive language is normal. Expressive language requires cognitive organisation and pragmatic expression of speech. When these children are confronted with tasks that demand higher-order cognitive processing and explanatory speech, they are inclined to talk less (Barkley, 1998:102). In spontaneous speech they talk loudly and excessively, do not listen and interrupt others (Mash & Wolfe, 2002:107).

- *Interpersonal difficulties*

Children with ADHD often have difficulties in their family and peer relationships. They are argumentative, intrusive, aggressive, impulsive, unpredictable, emotional and explosive. Families of children with ADHD find it difficult to cope with the non-compliant, aggressive and dependent behaviour of these children. The frequent conflicts with parents and siblings cause high levels of distress, often resulting in depression in mothers and antisocial (substance abuse) behaviour in fathers. If taken into account that ADHD is hereditary, it is possible that the parents themselves might present with ADHD, which compromises the situation further (Barkley, 1998:143; Mash & Wolfe, 2002:108). It is estimated that more than 50% of ADHD children experience difficulties in relationships with peers (Pelham & Bender, 1982 in Barkley, 1998:145). They are rejected by their peers because of their insensitive, uncooperative, inappropriate and aggressive behaviour. Their social reasoning and comprehension abilities are intact, but they do not apply this knowledge in social situations (Mash & Wolfe, 2002:109).

- *Task and situational factors*

As already noted, ADHD symptoms can vary considerably across different contexts. Different contexts also result in an inconsistency in performance levels. The ability of children presenting with ADHD to control their impulsive behaviours, to attend to tasks, to work consistently and to regulate their activity levels depend on the complexity of a task and requirements for organisation, the amount and level of stimulation and immediacy or feedback of consequences (Mash & Wolfe, 2002:109).

- *Medical and physical problems*

Findings of research studies could not confirm that children with ADHD are more vulnerable to upper respiratory infections, asthma and allergies. Further investigation is necessary. It is possible that children with ADHD might have delayed growth through mid-adolescence, which normalises by late adolescence. It is also found that there is a higher incidence of tic disorders (i.e. sudden, repetitive motor movements or phonic productions) in ADHD children (Mash & Wolfe, 2002:107). There are conflicting and not convincing findings on whether children with ADHD are more prone to enuresis and encopresis compared to other children. Children with ADHD

are, however, significantly more prone to injuries obtained during accidents and risk-taking behaviour, speeding and motor accidents in adolescence and young adulthood, crime, suicide attempts, substance abuse (drugs, alcohol), early onset of cigarette smoking and unsafe sexual behaviour (Mash & Wolfe, 2002:107-108; Barkley, 1998:122-123). Sleep problems have been shown to be a significant issue for children with ADHD. They have difficulty in falling asleep, resist going to sleep, wake up often during the night and they are tired when they wake up (Barkley, 1998:124). Corkum, Beig, Tannock and Moldofsky (1997 in Barkley, 1998:124), however, have found that these children's sleep problems could be more a function of comorbid disorders than of ADHD.

2.5.1.2 Comorbid disorders

The co-existence of other conditions complicates the symptoms of a child with ADHD and increases the risk of educational and psychiatric problems. In addition, the child's intellectual ability, his family, his environment and many other factors also play a role in his behaviour (Kewley, 1999:40). The most common comorbid psychiatric disorders that accompany ADHD in children is oppositional defiant disorder (ODD), conduct disorder (CD), anxiety and depression (Mash & Wolfe, 2002:110; Martin, Levy, Pieka & Hay, 2006:22). Levy, Hay, Bennett and McStephen (2004 in Levy *et al.*, 2006:11) found that inattentive girls tended to be more anxious than boys. ODD and CD are more commonly found in individuals with hyperactive/impulsive ADHD while the inattentive type are more likely to have depression and anxiety (Kewley, 1999:40). Several studies have indicated a genetic relationship between ADHD and these comorbid disorders (Martin *et al.*, 2006:22).

According to Martin *et al.* (2006:22) a reading disorder (RD) is also a common comorbid condition accompanying ADHD. A genetic study conducted by Martin *et al.* (2006:30) indicated that RD relates the strongest with ADHD, predominantly the Inattentive type, while CD and ODD relate most strongly to ADHD, predominantly the Hyperactive/Impulsive type. It was also found that children with a reading disorder as a comorbid condition to ADHD experienced problems with auditory processing (Sutcliffe, 2006:196).

Children with ODD are argumentative, lash out at others, are extremely hostile, and are non-compliant and short-tempered. Between 40% and 60% of children with ADHD – mostly boys – develop ODD by adolescence. ODD has a devastating effect on interpersonal relationships. Parents are often exhausted and demoralised by the child's behaviour (Kewley, 1999:42; Mash & Wolfe, 2002:110). Children and adolescents with CD are very aggressive to people and animals and are more relentless than those with ODD. Research suggests that between 30% and 50% of ADHD children develop CD. Children with ADHD and CD are at high risk of antisocial difficulties such as substance abuse and motor accidents (Mash & Wolfe, 2002:110; Kewley, 1999:43). In a study done by Barkley, Fischer, Smallish and Fletcher (2004:209) it was found that drug use by adulthood was mainly related to CD over a lifetime coexisting with hyperactivity.

About 27% to 30% of children with ADHD – usually younger boys – meet the criteria for an anxiety disorder (Barkley, 1998:140). These children fear changes in their lives, get panic attacks, get very anxious when social relationships fail or when they are separated from their parents. This has an incapacitating effect on their cognitive processes and their behaviour (Kewley, 1999:45; Mash & Wolfe, 2002:111). Rosca-Rebaudengo *et al.* (2000:38) indicate that the coexistence of ADHD and bipolar affective disorder is often reported in children and adolescents, with higher rates of first-degree relatives of these children also having a bipolar affective disorder.

Between 10% and 20% of children with ADHD suffer from depression. The severity of the depression can vary from dysthymia (mild depression) to major depression and even bipolar or manic depressive disorder (Kewley, 1999:44). Depression inevitably affects sleep patterns, appetite and cognitive processes. It negatively affects the child's self-esteem and it enhances irritability. A familial tendency to depression elevates the risk of a depressive disorder, but a child can also develop depression as a result of demoralisation caused by their symptoms (Mash & Wolfe, 2002:111). Children suffering from depression are often taken to a general practitioner by their parents for possible medication. It is important for the practitioner is knowledgeable about the disorders associated with childhood depression to make an informed decision about possible treatment or referrals.

Although there are some children with ADHD who display obsessions and compulsions they do not always meet all the diagnostic criteria for the obsessive-compulsive disorder (OCD). Children with obsessions and compulsions may react vehemently when their rituals are broken. This behaviour can be confused with ODD (Kewley, 1999:45).

Cipkala-Gaffin (1998:20) suggests that studies should continue to determine and refine justification of comorbidity with ADHD and whether ADHD exists apart from these other disorders. The clinician should seriously consider comorbidity when diagnosing children with ADHD because it has significant implications for treatment.

2.5.2 Comorbid disorders and associated problems in adults

As in children, adult ADHD never presents on its own (Searight *et al.*, 2000:2083). Due to the increased risk of psychiatric disorders as people grow older, it is more likely that adults with ADHD will experience coexisting disorders, such as anxiety, depression, bipolar disorder, substance abuse and other personality disorders such as borderline and antisocial disorders (Conners & Jett, 1999:20). The same psychiatric disorders can, however, also mimic adult ADHD (Searight *et al.*, 2000:2085). It is therefore difficult to distinguish between ADHD and comorbid conditions. One criterion that could be helpful is that the onset of ADHD is much earlier and runs a persistent course as opposed to comorbid disorders which have a later onset and tend to be more intermittent (Verbeeck, 2003:8). Schwartz (2001) suggests that it is important for comorbid conditions to be identified in order to stabilise the comorbidity before treating the ADHD. Asherson (2005:5) claims that up to 75% adults have at least one comorbid disorder and 33% have two or more other disorders. Young and Toone (2000:317) have found in research studies that most of the patients were suffering from depression and generalised anxiety disorders. This tendency means that general practitioners must be aware of coexisting conditions so they can make a correct diagnosis or refer the adult concerned to a psychiatrist or psychologist.

Although depression is very often present in adult ADHD, it is difficult to distinguish whether the depression is caused by many years of sadness and feelings of uselessness and undiagnosed attention deficits or whether it is a comorbid condition

of adult ADHD. It is difficult for a clinician to correctly diagnose an adult who presents with depression because it is difficult to distinguish an adult with primarily inattentive type ADHD from an individual who presents with depression. The main difference is that depression in ADHD is more cyclical, fluctuating from excitement to depression in minutes or hours, while a mood disorder lasts for much longer periods (weeks or months) (Resnick, 2000:56-57). Mood swings are less extreme and occur more often (4 to 5 times daily) with periods of normal mood in between (Asherson & Kooij, 2004:15).

High levels of anxiety are reported among adults with ADHD. Common symptoms of anxiety disorders (e.g. restlessness, impatience, sleep problems and irritability) are the same as those of ADHD. The symptoms of ADHD can be distinguished from those of anxiety disorders in that the latter do not include impulsivity as a symptom. Furthermore, the duration of symptoms of anxiety disorders are usually shorter and are accompanied by arousal of the autonomic nervous system (e.g. sweaty palms, heart palpitations, etc.) (Conners & Jett, 1999:91). Panic attacks and phobias are not normally associated with ADHD, although they can exist. Adults with ADHD are intolerant of everyday stress and their inability to cope with this stress may present as anxiety (Resnick, 2000:59). Obsessive-compulsive (OCD) and panic disorders are not usually related to ADHD, although some adults with ADHD may become obsessive to compensate for their unstructured and disorganised environment. It is, however, not driven by underlying anxiety as in the case of OCD. Although very rare, adults with ADHD can have a panic disorder. If it occurs it is necessary to determine what has caused the underlying anxiety (Resnick, 2000:59-60).

There is also a high rate of comorbidity of antisocial personality disorders (APD) in adults with ADHD. They are usually a result of undiagnosed conduct disorder. APD can be distinguished from ADHD by determining whether the person has no respect for the law or other persons, whether he is financially irresponsible and whether he shows no regret after hurting someone (Conners & Jett, 1999:92-93). ADHD-related antisocial behaviour can be treated and improved as these individuals know the rules, but find it difficult to refrain from breaking them. Unlike persons with an antisocial personality disorder, adults with ADHD do not choose to break the rule (Resnick, 2000:60).

Research suggests that between 14% and 33% of individuals who abuse alcohol or drugs can probably also be diagnosed with ADHD. It is often indicated in literature that substance abuse is a result of undiagnosed ADHD, although this assumption is debated amongst professionals. Individuals who know something is wrong with them and who experience the pain of ADHD symptoms can resort to self-medication. On the other hand, individuals who exhibit the ADHD symptoms of impulsivity and overactive behaviour may also abuse drugs. In addition, persons who are hyperactive and impulsive are also at high risk to abuse substances. This has important implications for the treatment of drug addicts. Rehabilitation programmes for substance abuse could be compromised if ADHD goes undiagnosed and untreated (Resnick, 2000:64).

Diagnosis of comorbidity can be the most difficult part of the assessment and treatment of ADHD, in particular in adults. Clinicians need to be familiar with the spectrum of mental disorders that coexist with ADHD.

2.6 ASSESSMENT OF ADHD

An assessment of a situation or a problem is "a consideration of all facts about it and a judgment or opinion of the position and what is likely to happen" (Collins Cobuild English Language Dictionary, 1991, s.v. 'assessment').

Diagnosing ADHD is a complex process presenting a difficult challenge to the professionals involved. Factors that contribute to this challenge are the high incidence of comorbidity with other psychiatric conditions, the variability of symptoms presented by each unique individual, the fact that most people experience ADHD-like symptoms in their lives and the lack of a single test to diagnose ADHD (Resnick, 2000:82). This calls for a comprehensive assessment to determine whether the individual can be diagnosed with ADHD and subsequently to decide on the appropriate management strategies. Assessment and management are closely interlinked (Kewley, 1999:82).

2.6.1 Assessment of ADHD in children

Diagnosis of ADHD in children requires that the professional needs to make a thorough evaluation taking the child's medical, developmental, school and family

history into account (Rief, 1998:22). A comprehensive assessment process involves interview and history techniques, observation techniques, standardised assessment measures and changes due to treatment (Conners & Jett, 1999:21). If a child's symptoms meet the criteria of the DSM-IV-TR (see Appendix A) it does not necessarily confirm a diagnosis of ADHD. It should be substantiated by information gained in a thorough process involving interviews with all relevant role players. This process aims at gathering useful diagnostic information on the child's medical history (pre-, peri- and postnatal), his developmental history, the medical history of the family and the child's school and social history. Information can also be gathered through questionnaires and behaviour rating scales completed by the parents, the child himself and the teachers. It will also be useful to obtain narrative reports from the teacher and to review school reports and the child's workbooks. Clinical observation of the child's behaviour can also provide useful information (Rief, 1998:22-23). The information gathering process also requires a psychoeducational assessment measuring the child's intellectual functioning, his visual, auditory and visual-motor processing skills and his scholastic strengths and weaknesses. A physical examination by a medical practitioner is necessary to rule out any other causes of the child's ADHD symptoms, e.g. vision and hearing problems. The medical examination may also include a neurological screening, which measures functions associated with the frontal lobes of the brain such as finger oscillation (regular fluctuation accompanied by change of direction) (Plug *et al.*, 1997:263), motor sequencing, alertness, impulsivity and confrontation tasks (Detweiler, Hicks & Hicks, 1999:45). Kewley (1999:81) considers the role of the general practitioner (in the UK) as an important role player in the effective screening and appropriate referral of children with possible ADHD.

It is important to remember that there is no medical test that can confirm or rule out ADHD. It is equally important that the clinician needs to determine the degree of impairment the symptoms cause in the child's life in order to justify an ADHD diagnosis (Rief, 1998:25).

To make a justified diagnosis of ADHD the assessment must be multi-dimensional. The child's particular difficulties must be evaluated within the context of his or her

family and environment to devise the most appropriate management strategies (Kewley, 1999:87).

2.6.2 Assessment of ADHD in adults

The diagnosis of ADHD in adulthood is much more complicated than for children. According to Murphy and Gordon (1998:347-348) there are several reasons for this:

- The self-report of adults on their childhood symptoms are often incomplete and imprecise because they produce this information mainly from memory.
- As noted before, adults are more prone to psychiatric disorders complicating the diagnosis of ADHD.
- The onset of many of the adult psychiatric disorders is in young adulthood. This means that the clinician has a broader range of disorders to rule out than when working with children.
- Certain medical conditions (such as hypo- or hyperthyroidism, diabetes, certain heart problems and malnutrition) that are more related to adults can also cause the same symptoms as those of ADHD.
- This emphasises the need for a thorough medical examination in the assessment process to rule out these conditions before diagnosing ADHD.
- Adults have been living longer than children exposing them to more stressful life events, which are also causal factors in ADHD-like symptoms.
- It is difficult to assess the degree of impairment in adults due to limited sources of information.
- Due to the publicity adult ADHD receives, adults are more informed on the symptoms of the disorder and this can affect the accuracy of the information they present to the clinicians.

To address some of these issues and to enhance the reliability of information, Weiss and Murray (2003:717) suggest that people who know the individual well (e.g. spouse, close friend, parent, sibling) as well as someone who knew the person as a

child (e.g. parent, aunt, uncle) should be asked to complete rating scales. In addition to the medical conditions mentioned above, Searight *et al.* (2000:2083) suggests that petit mal, hearing deficits, hepatic disease, lead toxicity, sleep apnea, drug interactions and a history of head injury should also be taken into account when an adult is assessed for possible ADHD.

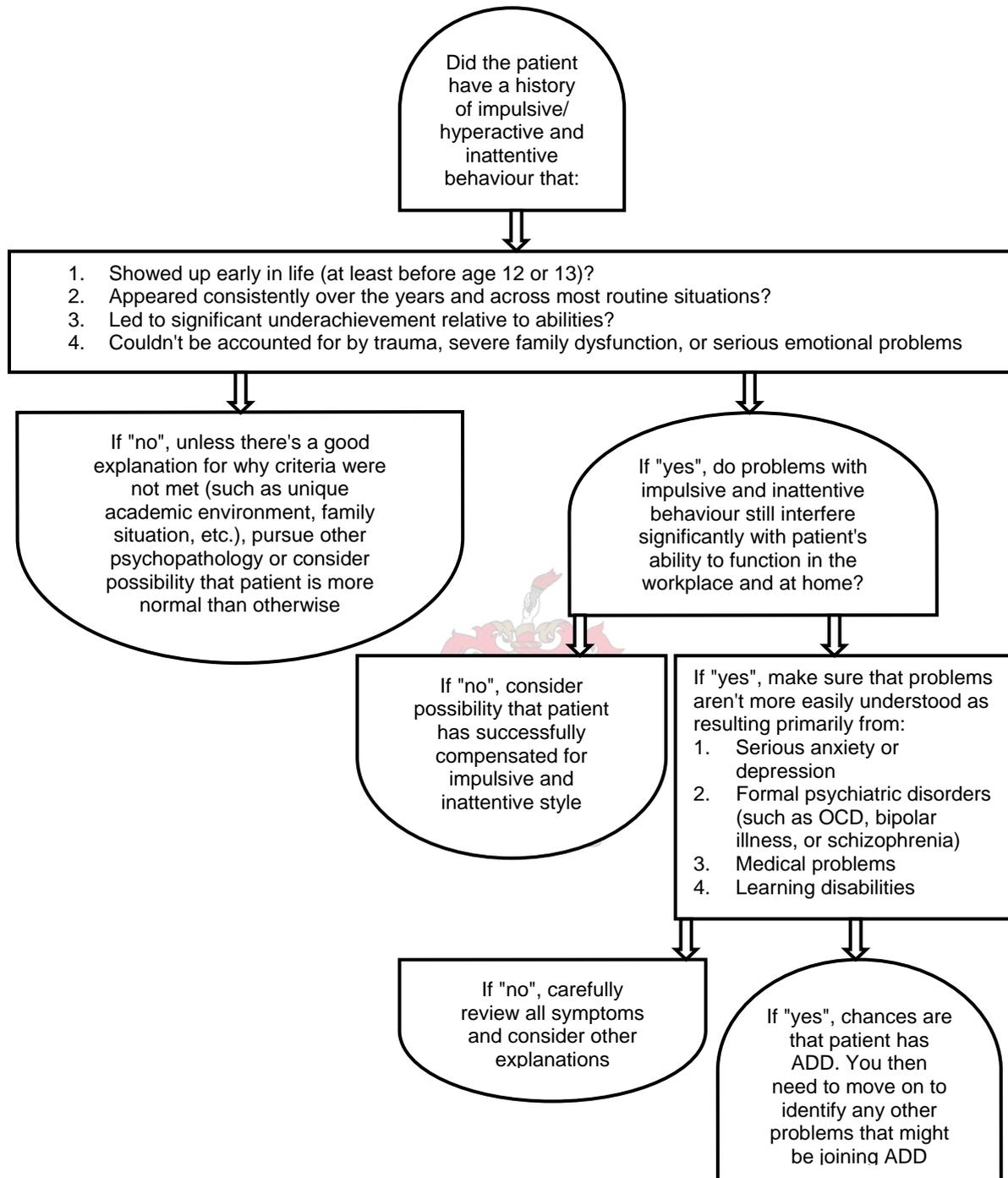
Weiss and Murray (2003:716) consider the assessment process for adults with ADHD as more or less the same as for children. It requires the same process of obtaining a current and retrospective history of the individual's symptoms (see Appendixes A, B and C for diagnostic criteria for adults), his developmental and psychiatric history (see Appendix D for an example provided by Weiss and Murray). A medical examination is also performed. According to Murphy and Gordon (1998:349) any evaluation of an adult with ADHD should answer four primary questions:

- Is there credible evidence that the patient experienced ADHD-type symptoms in early childhood that, at least by the middle school years, led to substantial and chronic impairment across settings?
- Is there credible evidence that ADHD-type symptoms currently cause the patient substantial and consistent impairment across settings?
- Are there explanations other than ADHD that better account for the clinical picture?
- For patients who meet the criteria for ADHD, is there evidence for the existence of comorbid conditions?

Murphy and Gordon (1998:354) have summarised the essential steps in the assessment of adults with ADHD in a diagram:

(Note: The age of onset indicated at point 1 in the second text box is not congruent with the criteria set out in the Utah Criteria (see Appendix B), which indicates that onset should be before the age of seven (2000:92)).

Figure 2.1: Essential steps in assessment of adult ADHD



Effective and thorough assessment inevitably enhances effective management.

2.7 MANAGEMENT OF ADHD

One needs to bear in mind the extent of emotional and psychological damage often suffered by people with ADHD. It takes much more than medication to overcome the years of rejection or admonition by parents, teachers, job managers and peers that can weaken the strongest egos. The feelings of isolation and worthlessness imbued through recurring failure or non-completion of tasks. Medication just enables people to learn and understand what they couldn't understand or see before ...

Then comes the process of understanding that you are not stupid but in fact creative, intuitive, spontaneous and not weird. That your personality is not one to be ashamed of just because peers and elders called you 'weird' or 'mental' as a child and teenager. Most important is holding no resentment against those who gave you such a hard time ... An emotional therapy programme is worth taking seriously ... On more than one occasion I felt like a hypochondriac when around certain members of my family ...

My father used to say that I was the cause of all the trouble in the family ... (Joseph Frank in Taylor, 2004).

ADHD cannot be cured. The most effective way of dealing with ADHD in both adults and children is by means of a multi-modal approach involving a variety of involved role players and a variety of strategies. Treatment strategies aim at supporting the individual diagnosed with ADHD to manage and comprehend the symptoms (Resnick, 2000:97).

2.7.1 Management of ADHD in children

The success of any intervention programme implemented in support of the child with ADHD depends on the following:

- The choice of the most suitable strategies for a specific child (Kewley, 1999:91).

- The degree of cooperation among all the members of the multi-disciplinary team, which includes the parents, the psychologist, the teacher and the medical practitioner (Detweiler *et al.*, 1999:53).

To enhance the child's development and to secure success, management of the child's ADHD is a continuous process of monitoring, re-assessment and adjustment by the members of the multi-disciplinary team (Detweiler *et al.*, 1999:54; Rief, 1998:28). Although many intervention options exist it was found that treatment that focuses on behaviour management, parental training, educational and medical intervention was successful (Mash & Wolfe, 2002:120; Conners & Jett, 1999:59).

Medical intervention is a controversial issue with matters such as overprescription and overdiagnosis being raised. Swanson, McBurnett, Christian and Wigal (1995 in Mash & Wolfe, 2002:121) have found that in 80% of children with ADHD stimulant medication has, despite its limitations, a strong positive effect on their ability to sustain attention, to control their impulses and to persist in activities. It was also found that medication improved the social and motor skills (Lerer, Lerer & Artner, 1977 in Mash & Wolfe, 2002:121). According to Kewley (1999:91) medical intervention alone is not sufficient, but it will enhance the individual's actualisation of potential and enable him or her to attain positive results more readily. There is not yet irrefutable proof of the effectiveness of alternative medicines (homeopathy) and a dietary change in the management of ADHD (Kewley, 1999:91).

The general practitioner plays a significant role within the multi-disciplinary team. He needs to discuss the medical intervention with the parents, he decides which medicine would be best for the child and he needs to check the effectiveness of the medicine (Detweiler *et al.*, 1999:53). As he is often the first in line, he might need to refer the child to other relevant professionals, e.g. a psychologist, a physiotherapist, an occupational or a speech therapist. This requires a basic knowledge of ADHD to manage his part of the intervention programme effectively. Thapar and Thapar (2002:2) report, though, that doctors within primary care in the UK received little or no training in child psychiatry and that they did not feel confident that they could manage ADHD.

In designing an effective treatment programme it should be judged against the following basic criteria:

- Interventions need to be intensive and continuing and should include a combination of treatments.
- Due to the child's inability to organise and a lack of internal structure interventions should provide external structure.
- The behaviours should be addressed in the settings where they occur.
- Interventions should take the child's developmental level as well as the needs and assets of both the child and the family into account (Waschbusch, Kipp & Pelham, 1998 in Mash & Wolfe, 2002:120).

To effectively deal with the ADHD behaviour the child and the family do, however, also need to learn new skills in respect of social functioning, negative behaviour and thoughts, academic development and stress mitigation (Conners & Jett, 1999:59). Parent management training is aimed at providing them with the skills to manage their child's behaviour effectively and to teach them how to cope with the emotional impact the raising a child with ADHD has on them. Individual therapy, family therapy and support groups also play a significant role in helping parents and child in the management of ADHD behaviour symptoms (Mash & Wolfe, 2002:125-126).

Educational interventions would focus on the learning processes, an increase in academic performance and teacher support (Mash & Wolfe, 2002:125-126). Children with ADHD spend a significant number of hours in an educational setting where they often struggle with academic demands. Research studies, internationally and locally, have revealed that teachers' knowledge base with regard to ADHD is limited. This implies that a deliberate effort should be made to enhance their knowledge of ADHD to manage it effectively in educational environments (Houghton, 2006:267; Kleynhans, 2005:68).

2.7.2 Management of ADHD in adults

As is the case when dealing with children, a multi-modal approach should be used to manage ADHD in adults (Asherson, 2005:8; Weiss & Murray, 2003:719). According

to Resnick (2000:116), an effective multi-modal approach "should not only help patients to take charge of their ADHD problems, but also help instil hope, optimism, and encouragement that these adults can have better, more productive, and happier lives".

Adults may have come a long way with ADHD without knowing what was "wrong" with them. The diagnosis itself can come as a great relief and so immediately has a great impact on the individual (Asherson, 2005:8). Successful management of adult ADHD entails educating the individual with ADHD about the disorder as well as pharmacological, psychological and environmental interventions (Resnick, 2000:97; Weiss & Murray, 2003:719).

Patient education is considered by many researchers as the most successful intervention (Resnick, 2000:115; Searight *et al.*, 2000:2087; Rosca-Rebaudengo *et al.*, 2000:38). Patients need to understand their condition in order to self-manage their symptoms, to put their symptoms into perspective, to repair their self-esteem, to develop more realistic expectations in terms of their performance and to develop new coping strategies (Young, 1999:185; Resnick, 2002:115). Adults should also be informed about their increased risk of substance abuse and encouraged to maintain a moderate approach to drinking or to abstain from alcohol altogether (Searight *et al.*, 2000:2087). The role of genetics, the neurochemical processes in the brain and environmental risk factors involved in ADHD should also be conveyed to the individual. It is useful to involve family members, spouses and children in the psycho-educational process (Asherson & Kooij, 2004:11).

Research studies on the effects of stimulant medication for adults is much less than that for children, but available results already indicate the same positive effect on adult ADHD behaviour (Asherson, 2005:8). The same controversy exists with regard to medication for adults. Due to the high incidence of depression in adults stimulants and antidepressants are frequently used simultaneously (Resnick, 2000:106). Since ADHD symptoms are exacerbated by premenstrual syndrome, adult females need special attention in terms of medication as well as counselling (Solden, 1995 in Resnick, 2002:107). Adults tend to adjust their medication themselves without consulting their medical practitioner, which can affect their behaviour. Close monitoring by the practitioner is thus an important component of the treatment

program (Resnick, 2002:107). Resnick (2000:128) also warns that any change in a person's medical condition can impact on his/her ability to cope with the symptoms of ADHD. He holds that about half of all the adults with ADHD will develop a chronic medical condition, which indicates that regular monitoring of medical status should be an important component of a long term treatment plan.

Research studies on the effectiveness of psychotherapy for adults are limited (Asherson & Kooij, 2004:14; Young, 1999:185). Psychotherapy should aim at helping the individual to lessen symptoms and to learn coping strategies. A cognitive-behavioural approach to inculcating self-management strategies, anger control, problem-solving and decision-making skills, social skills and organisational skills has proved to be very effective with adults. Progressive relaxation techniques can be taught to alleviate stress (Young, 1999:185-186). Family, marital and group therapy may be used as additional treatments (Resnick, 2002:110). Individuals can be taught to restructure their environment and lifestyle so that they are conducive to a decrease in ADHD symptoms (Resnick, 2002:112).

The general practitioner may find it necessary to refer a patient to a psychiatrist or psychologist with expertise, or to consult with them, when the history of a patient suggests an adult onset of his symptoms or when he suspects the existence of other disorders (Weiss & Murray, 2003:720). This requires that the general practitioner have at least a basic awareness of ADHD and other psychiatric disorders in adults. This view is supported by a statement of Dr Lily Hechtman of McGill University (in Werb, 2005:1):

I find that general practitioners are often not aware of the fact that A, this condition continues into adulthood, and B, that they really focus more on co-morbid conditions. A lot of these people in adulthood develop anxiety, depression, substance abuse or other things. So [GP's] never think of attention deficit disorder as possibly underlying it.

Verbeeck (2003:9) confirms this view: "Greater clinical awareness of the nature and comorbidity (of ADHD) will advance the therapeutic success rate of a neglected but treatable disorder". Werb (2005:2) also does so: "Better diagnostic guidelines and

more awareness will go a long way in helping adults with ADHD to take back control over their lives".

2.8 RESEARCH ON GENERAL PRACTITIONERS' KNOWLEDGE OF ADHD

If the former is the case in other countries, the question arises whether this situation is the same, better or worse in South Africa. A comparison of the results from this study with the findings from more or less similar studies in other countries and two in South Africa, which will be dealt with in Chapter 4, may offer an answer to this question.

Only a few studies could be identified that relate to a greater or lesser extent to medical practitioners' knowledge, attitudes and practices of ADHD. Two studies were done in the USA (Adult ADHD Often Missed, 2003:19-20; Kwasman, Tinsley & Lepper, 1995), one in Singapore (Lian, Ho, Yeo & Ho, 2003), one in Wales (Kirby, Davies & Bryant, 2005), one in Australia (Shaw *et al.*, 2003) and two in South Africa (Venter *et al.*, 2003; Venter *et al.*, 2004).

All of these studies made use of questionnaires assessing mainly knowledge, perceptions, attitudes, treatment and practice of general practitioners (also known in some countries as primary health care practitioners), paediatricians and psychiatrists. As the aim of this study is specifically directed at general practitioners, only the results that relate to them will be summarised.

General practitioners

- are not confident in diagnosing ADHD in adults
- do not feel adequately trained in diagnosing ADHD in adults
- are much more knowledgeable in diagnosing and treating depression and generalised anxiety disorders than adult ADHD
- prefer referring adult ADHD patients to specialists (as opposed to patients with depression and generalised anxiety disorders)

- would take a more active role in diagnosing and treating children and adults with ADHD if they had an easy-to-use screening tool
- knew less about learning difficulties (of which ADHD was one) than teachers
- do not mind treating children with ADHD
- find treating patients with ADHD time consuming
- find it difficult to co-ordinate interventions and to liaise with schools
- prefer to refer children with ADHD to neurologists, paediatricians and occupational therapists
- prefer an educational or psychological assessment before commencing with medical treatment

(Adult ADHD Often Missed, 2003:19-20; Kwasman, Tinsley & Lepper, 1995; Lian *et al.*, 2003; Kirby *et al.*, 2005; Venter *et al.*, 2003; Venter *et al.*, 2004).

A detailed discussion on the two research studies conducted in South Africa follows in Section 3.6.1.

It is interesting to note that a document (TG 190/3) released in September 2003 by the New South Wales Department of Health stipulates that only psychiatrists are allowed to assess adults with ADHD and initiate prescription of psychostimulants. The patient may be referred to a general practitioner, but only after 6 months of treatment by the psychiatrist and in some cases by a neurologist. The general practitioner may not alter the dosage or the drug without written consent from the psychiatrist. The NSW Department of Health controls the prescription of psychostimulants for three reasons. They are concerned about inappropriate prescription of psychostimulants, the different approaches with regard to diagnosis and treatment among professionals and the results of scientific studies in this field (New South Wales, 2003).

2.9 REFLECTION AND CONCLUSION

This chapter provided a contextual framework that informed the aims of the study. It discussed the history, different theoretical perspectives on the etiology of ADHD, the prevalence and outcome, diagnosis, symptoms, comorbid disorders, assessment and management of ADHD in both children and adults. This was followed by an overview of relevant research studies in which researchers conclude that the general practitioner is in need of more knowledge to diagnose and treat individuals, especially adults, with ADHD effectively.

The literature review revealed that ADHD is a complex, controversial disorder posing a real challenge to researchers, clinicians and medical practitioners. Leaders in the field differ on many aspects of ADHD. As stated in the last paragraph of Section 2.2.3, each individual has his/her own view and understanding of the reality, emerging in different perspectives on it, also with regard to ADHD. Each perspective has its truths and limitations: the whole truth (of ADHD) can never be fully apprehended (Guba & Lincoln, 2005:193). This view is congruent with the ontology of the postpositivist paradigm, within which this research is conducted, which will be discussed in the next chapter.

In the following chapter the research paradigm, the research design and research methodology will be presented. This will be followed by an exposition and discussion of the findings of this research in Chapter 4.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

This chapter presents the research paradigm, the research design and the research methodology. It commences with a discussion of the research paradigm in which this research is situated. Next, there is a description of the research design and methodology employed in this study. This is followed by a discussion of the research instruments, the research procedure used and the process of data-analysis. A summary is provided at the end of the chapter.

3.2 RESEARCH PARADIGM

Mertens (2005:2) defines *research* as a "way of knowing" which involves:

a process of systematic inquiry that is designed to collect, analyze, interpret, and use data to understand, describe, predict, or control an educational or psychological phenomenon or to empower individuals in such contexts. The exact nature of the definition of research is influenced by the researcher's theoretical framework.

It follows that a theoretical framework or paradigm is the way the researcher views the world, based on his value and belief system. It guides the researcher's thoughts, his actions and his meaning giving with regard to his research (Mertens, 2005:7).

According to Denzin and Lincoln (2005:183) a paradigm comprises of four fundamental principles: axiology, epistemology, ontology and methodology, which are interrelated. Axiology refers to:

the ways in which values feed into the inquiry process: choice of the problem, choice of paradigm to guide the problem, choice of theoretical

framework, choice of major data-gathering and data-analytic methods, choice of context, treatment of values already resident within the context, and choice of format(s) for presenting findings (Guba & Lincoln, 2005:197).

Epistemology refers to the relationship between the knower and the known, while ontology refers to the nature of the reality. Methodology is the approach the researcher adopts to obtain the desired knowledge and understanding (Mertens, 2005:8-9).

It was argued in Section 2.2.3 and in Section 2.9 that each individual views and understands reality differently and for this reason truth can never be fully known. This situates the current study within the postpositivist paradigm. For the postpositivist researcher only one reality exists, but this can only be partially known due to the limitations situated in the researcher and the "intractable nature of phenomena" (ontology) (Guba & Lincoln, 2005:195). A theory can therefore not be "proved" by researchers, "but they can make a stronger case by eliminating alternative explanations" (Mertens, 2005:11). In terms of axiology the postpositivist researchers hold that their study is conducted within a value-free framework (Denzin & Lincoln, 2005:10). The epistemological supposition of the postpositivist researcher is that he/she should remain objective in order to prevent his or her values or biases from influencing on the research. This is done by employing quantitative methods to obtain the desired knowledge (methodology) (Mertens, 2005:11-12). The postpositivist paradigm is associated with a quantitative approach in order to operationalise, measure, undertake quasi-experimentation, quantify, determine causality and correlations and to generalise results (Denzin & Lincoln, 2005:11). A quantitative approach aims at claiming truth about an educational or psychological phenomenon by means of collecting evidence in an objective manner to confirm or falsify the claim (Mertens, 2005:115). Within the postpositivist paradigm the process of designing an empirical test to confirm or reject a knowledge claim is known as the research design (Mertens, 2005:115-116).

3.3 RESEARCH DESIGN AND RESEARCH METHODOLOGY

The research design is the structure or plan that, along with the research paradigm, informs the research process. The research design is thus implemented by employing methods, techniques and procedures (Babbie & Mouton, 2001:xxvi; Durrheim in Terre Blanche, Durrheim & Painter, 2006:57; McMillan & Schumacher, 2006:22; Tredoux & Smith in Terre Blanche, Durrheim & Painter, 2006:161). Bless, Higson-Smith and Kagee (2006:71) view the research design as "a specification of the most adequate operations to be performed in order to test a specific hypothesis under given conditions". They differentiate between research design and research management. The latter is, according to them, the actual plan that directs the researcher's actions and decisions in the course of the research process (2006:71).

Research methodology refers to the variety of methods employed to obtain the required knowledge. Each paradigm is associated with its own experimental methods. A postpositivist approach to methodology is associated with quantitative methods (Mertens, 2005:12). Different research designs, or "types of study", address different types of research questions and employ different methods and procedures. The types of study can be divided into two main categories, i.e. empirical and non-empirical studies. Empirical studies can make use of "primary data" (obtained by means of surveys, experiments, case studies, etc.) or can analyze "existing data" (text or numerical) (Mouton, 2003:57; McMillan & Schumacher, 2006:23). The objective of the present study was to determine the familiarity, attitudes and practices of general practitioners with regard to ADHD in children and adults. Consequently, a survey was employed as a method to obtain information from general practitioners in South Africa about their familiarity, attitudes and practices with regard to ADHD in children and adults.

Before explaining the methods of data collection, it is necessary at this stage to briefly discuss the ethical considerations involved when conducting social research.

3.4 ETHICAL CONSIDERATIONS

When embarking on social scientific research some ethical issues arise. The researcher must always be aware of prevalent ethical issues when planning the

research design. Three basic ethical principles should always be maintained: beneficence, respect and justice (Mertens, 2005:33). Social research can invade the privacy of the participants. For example, people are often requested to reveal personal information. For this reason, it is important for them not to be forced to participate. If they participate they must be assured of anonymity and confidentiality (Babbie & Mouton, 2001:523; Mertens 2005:35).

Ethical issues involved in the current research will be dealt with in the discussions in Sections 3.5.3, 3.7.1 and 3.7.3.

3.5 METHODS OF DATA COLLECTION

As explained in Section 3.4 a survey was employed as a method to collect data.

A survey can be defined as a study that is "usually quantitative in nature and which aims to provide a broad overview of a representative sample of a large population" (Mouton, 2003:152). McMillan and Schumacher (2006:23) consider a survey as a method regularly used in educational research to obtain information, for example on attitudes and opinions. Thomas (2003:41) describes a survey as a method of "gathering information about the current status of some target variable within a particular collectivity, then reporting a summary of the findings. The summary includes data in quantitative form". Although a survey enables the researcher to collect data from a large number of people, its validity can be contaminated by the honesty of the respondents, whose responses are self-reports of their knowledge and attitudes (Mertens, 2005:167). A high non-response rate is also one of the main sources of error in a survey, raising concerns of response bias (Mouton, 2001:153). Despite this, Babbie and Mouton (2001:232) still consider a survey as the best existing method of obtaining data that describe the attitudes and orientations of a population too large to observe directly.

The present research employed three survey methods to collect data: (i) a web-based survey in the form of a self-administered questionnaire via an e-mail message, (ii) an e-mail message with an attached questionnaire, and (iii) a structured telephone interview.

3.5.1 Web-based self-administered questionnaire via an e-mail message

Mertens (2005:206) as well as McMillan and Schumacher (2006:240) contend that the tendency to use web-based self-administered surveys is increasing due to technological development. The difficulty of including all possible respondents in the sample was intensified by the fact that not all people had access to a computer and therefore could not be included. This could have biased the interpretation of the results. Web-based surveys allow for creative designs and options enabling better analysis (Mertens, 2005:206). McMillan and Schumacher (2006:238) identify three main disadvantages of a web-based survey, namely "limited sampling, lack of confidentiality and response rate". They consider a low response rate as a significant problem that can be enhanced by follow-up broadcasts. The main advantages are "reduced cost and time, quick response, easy follow-up and the ability to survey a large population" (McMillan & Schumacher, 2006:238). They summarise the advantages and disadvantages of web-based surveys as follow:

Table 3.1 Advantages and disadvantages of internet-based surveys

Advantages	Disadvantages
Cost savings Time savings Increased accuracy Direct participant entry of data Enhanced presentation Immediate respondent feedback Increased convenience Design flexibility Fast creation and delivery	Low response rate and response bias Lack of incentive Authenticity of respondent Security and confidentiality Potential for information overload Visual differences with different browsers and monitors Lack of computer expertise Difficulty obtaining a random sample

(McMillan & Schumacher, 2006:239)

In this study an e-mail message introduced the survey to the recipient by means of a covering letter with a link in this letter to the web site containing the same covering letter and questionnaire.

3.5.2 E-mail message with attached questionnaire

E-mail messages are not as useful as web-based surveys, because they are less interactive and more restrictive in terms of response options. The same difficulty mentioned in the previous section with regard to access to a computer causing a

biased sample applies to e-mail messages (Mertens, 2005:206). Despite these disadvantages the current researcher considered an e-mail message with an attached short questionnaire as a useful instrument to send to the faculties of Family Health or Health Sciences of relevant universities to obtain information with regard to the training of general practitioners.

3.5.3 Structured telephone interview

Oppenheim (1996:83-84) and Mertens (2005:33) state clearly that one of the basic ethical principles in the collection of data is that the respondent may not be harmed in any way as a result of their participation in the research project (ethical principle of beneficence). A respondent's ethical right to refuse to respond to certain questions, or even to be interviewed at all, should always be respected (ethical principle of respect) (see Section 3.7.3). However, it has been found that, apart from saving money and time, telephone interviewing often yields a lower refusal rate than a face-to-face interview (Oppenheim, 1996:98). This is confirmed by Mertens (2005:196).

Babbie and Mouton (2001:257) explains that one of the disadvantages of telephone interviewing is to obtain a representative sample of the population. In this study it was, however, not necessary to obtain a representative sample of the medical faculties in the country because of their limited number.

3.6 RESEARCH INSTRUMENTS

3.6.1 Web-based self-administered questionnaire via an e-mail message

This questionnaire (see Appendix G) was compiled by merging questions from a questionnaire developed by Venter *et al.* (2003) (items 10, 17, 18, 19, 20 and 21) and questions employed from a press release on a survey undertaken by researchers from the New York Medical Center and School of Medicine (items 1, 2, 3, 9, 15, 20 and 21) (Adult ADHD Often Missed, 2003) (see Section 3.6.1.1 for further details regarding these surveys). After an extensive review of the literature the researcher decided to add a number of questions (Items 4, 5, 6, 7, 11, 12, 13, 14, 16 and 22) to the survey.

The questionnaire (available in both English and Afrikaans) developed for this study consisted of 22 items, excluding the section on demographic data. The respondent had to respond to the same question twice, i.e. one with regard to children and one with regard to adults. Each item was phrased in a question format with a maximum of four options to choose from. Although these options varied from question to question most of the responses had to be indicated on a Likert-scale. With the exception of item 4, where more than one option could be marked, only one option could be selected. The majority of questions were closed-ended. The questionnaire commenced with a section on demographic data. Information was requested on the number of years in practice, age, gender, location and nature of his/her practice, university where the practitioner was trained and the number of patients treated for ADHD (adults and children). The survey differentiated between the variables of familiarity (items 1 to 9), attitudes (items 10 to 17) and practices (items 18 to 22). These three components were not identified on the questionnaire. With regard to knowledge (item 1), confidence (item 2), training (item 3) and referral (item 19) a distinction was made between ADHD, depression and generalised anxiety disorder, as these two conditions are common comorbid disorders of ADHD with regard to both children and adults (Mash & Wolfe, 2002:110; Conners & Jett, 1999:20). This distinction was made to obtain differentiated responses with regard to the familiarity and comfort with which the practitioner diagnoses and manages these conditions and is based on the study conducted by Adler (2003).

The questionnaire used in the current research differs from the questionnaire employed by Venter *et al.* (2003). The questionnaire used in this study:

- focuses significantly less on the general practitioner's knowledge about the use of stimulants and more on his/her familiarity and attitudes with regard to ADHD;
- explores the general practitioner's familiarity, attitudes and practices also with regard to adults;
- explores the general practitioner's familiarity, attitudes and practices with regard to the comorbid disorders of depression and generalized anxiety disorder with regard to both children and adults;

- explores the training needs of general practitioners

3.6.1.1 Questionnaire developed by Venter *et al.* (2003)

Permission to use certain questions from the questionnaire developed by him and his colleagues (Venter *et al.*, 2003) was granted by Prof André Venter of the Department of Paediatrics and Child Health, Faculty of Health Sciences, University of the Free State in South Africa (see Appendix H). Prof Venter also supplied the current researcher with a copy of this questionnaire.

The survey questionnaire developed by Venter *et al.* (2003) was based on a questionnaire originally developed by Kwasman *et al.* (1995), who did a similar survey. The questionnaire of Venter *et al.* consisted of four sections, namely demographic data, attitudes towards caring for children with ADHD, management of children with ADHD and knowledge about the use of stimulants (Venter *et al.*, 2003:13). Venter *et al.* added additional items to Kwasman's questionnaire in order to gain more information with regard to the use of stimulants and "alternative points of view regarding etiology and management" of ADHD. The questions were mainly in the form of statements where the respondent had to indicate their choice. Some of the items required a reflection of opinion, such as "agree", "neutral" and "disagree".

The questionnaires were mailed to 419 identified general practitioners in the Free State Province of South Africa on two separate occasions. They were asked to complete the questionnaire only if they were in active practice. All practitioners were asked to complete Section A (demographic data). Only those who managed children with ADHD, were asked to complete the remainder of the questionnaire. The results were summarised in frequencies and percentages.

The response rate was 38.2%, which must be seen as a limitation. It was found in this study that a substantial number of general practitioners in the Free State Province manage children with ADHD and the majority do not mind treating them. Their referral pattern is dependent on the availability of professionals, but they mainly refer to neurologists, paediatricians and occupational therapists. They find liaising with schools and coordination of interventions difficult because of time constraints. Other problems they encounter are that consultations are time consuming, parents are demanding and they feel that they are relatively poorly

reimbursed compared to the amount of time spent on the patient. About 70% of the respondents indicated that they referred children with ADHD for an educational/psychological evaluation before making a diagnosis or starting treatment. They obtained psychometric information on their patients and saw teacher and parent education as a way of improving the management of these children. Their management of children with ADHD is more or less in line with acceptable protocols and methylphenidate is the most commonly prescribed medication. It seems that the study shows that since general practitioners do treat and manage children with ADHD, the curricula of the medical schools should ensure that medical students are adequately trained to treat and manage children with ADHD (Venter *et al.*, 2003:12-17).

In a follow-up study Venter *et al.* (2004:12) used the same questionnaire on 388 psychiatrists and 546 paediatricians in South Africa registered with the Health Professions Council of South Africa. An analysis of 145 questionnaires from psychiatrists and 278 from paediatricians was possible. It revealed that 51.7% of the psychiatrists and 61% of the paediatricians treat children with ADHD. The paediatricians treat children from toddler stage to school-aged children and the psychiatrists treat school-aged children through to adults. The study revealed significant differences between the psychiatrists and paediatricians with regard to their knowledge and management of children with ADHD. Although both groups enjoy managing children with ADHD considerably more paediatricians found it time consuming, felt poorly remunerated and considered that an improvement in interdisciplinary contact would lead to improved care of these children. There was a significantly greater tendency among paediatricians to refer their patients to educational, occupational, speech and physical therapists and to psychologists. The psychiatrists appeared to be more inclined (although not significantly) to refer their patients to neurologists. Neither specialist refers generally to homeopaths and dieticians. Psychiatrists are significantly more inclined to refer to a social worker. Both groups indicated that they would prefer an educational or a psychological assessment before they started treatment (Venter *et al.*, 2004:14). Generally paediatricians were more interested in the patient's developmental functioning, a psycho-educational assessment and his/her family background and functioning, whilst the psychiatrists' focus was more on neuro-biological factors. In terms of

medication it became apparent that psychiatrists were more informed and covered a wider spectrum of prescribed medicine than paediatricians. According to Venter *et al.* (2004:18) these differences can be attributed to differences in the types of practices and the training of the specialists. Venter *et al.* (2004:18) concludes that both paediatricians and psychiatrists seem to be adequately trained to diagnose and manage children with ADHD.

3.6.1.2 Survey of New York Medical Center and School of Medicine

Health and Medicine Week ("Adult ADHD often missed", 2003) reported on a national survey performed by Prof Lenard Adler of the New York University School of Medicine. This survey aimed at determining how comfortable primary care physicians are in making a diagnosis of ADHD in adults. When Prof Adler was approached for permission to use his questionnaire, he was about to submit a manuscript on this research for publication in a subject journal. He gave permission to use only the information that had been included in the press release (see Appendix I).

The survey revealed that 48% of the 400 respondents were not confident in diagnosing ADHD in adults, while 34% reported being "very knowledgeable" or extremely knowledgeable" about ADHD. About 92% reported the same for depression and 83% for generalised anxiety disorder (GAD). Sixty-four percent of the respondents indicated that their training was "not at all thorough" or "not very thorough" with regard to the diagnosing and treating of ADHD in adults, compared with 13% who said the same with regard to their training in depression. Sixty-five per cent of the primary care doctors refer an adult patient with ADHD to a specialist compared to only two per cent for depression and four per cent for GAD. About 85% indicated that they will play a more active role in diagnosing and treating adult ADHD if they have a well-validated easy-to-use screening tool.

3.6.2 Questionnaire as an attachment to an e-mail message

This questionnaire (see Appendix K) was designed to obtain information on the training of general practitioners at an undergraduate level with regard to ADHD, depression and generalised anxiety disorders distinguishing between children and adults. Apart from the distinction made with regard to ADHD, depression and

generalised anxiety disorders, hours spent on lectures, self-study, practical work and any other activities (e.g. assignments) were recorded as far as possible. The year level within which these activities take place was also recorded if it was available.

3.7 RESEARCH PROCEDURE

3.7.1 Web-based self-administered questionnaire via an e-mail message

Various options were considered to conduct the survey. The Medical and Dental Professions Board of the Health Professions Council of South Africa was contacted to explore the possibility of obtaining names and addresses of general practitioners in the country from them. They had a comprehensive list of about 20 000 registered general practitioners, but were unfortunately unwilling to make their e-mail addresses available for security reasons. The postal addresses of the registered general practitioners were available for purchase. However, the costs involved in purchasing these records and posting the questionnaires to a representative sample were too high.

Consequently other avenues were explored. Various pharmaceutical companies (Novartis; Adcock Ingram Group; Smith-Kline) were contacted. They had either no addresses available or only limited postal addresses and no e-mail addresses. The Board of Health Care Funders referred the researcher to the company MEDpages. This company seemed to offer the most acceptable option.

MEDpages has a comprehensive database of general practitioners which dates back to 1996, and which is actively managed, expanded and maintained. They have directories of all the health care providers available for all the provinces. In addition to their other services, they also offer to conduct surveys (MEDpages, 2006). At the time when this survey was conducted, they had the e-mail addresses of 6704 registered general practitioners nationally. McMillan and Schumacher (2006:125) view this kind of sample as "convenience sampling". They caution that, although useful, it limits the generalisation of the results of the study. Since the quotation from MEDpages was affordable, the decision was made to use their service to conduct the survey. As McMillan and Schumacher (2006:125) point out, a convenience sample can limit the generalisation of results.

After the composition of the questionnaire, it was forwarded by e-mail as an attachment in Word format to two general practitioners for their comment. They were informed about the purpose and procedure of the research by telephone. They were asked to evaluate the questionnaire against these criteria and to make any suggestions they deemed necessary. Feedback was received from both doctors and adaptations were made to the questionnaire to accommodate their suggestions. These suggestions largely focused on the formulation of one or two of the questions and on alternative response options for one of the questions.

The questionnaire was then placed on a web site and introduced to the general practitioner by means of an e-mail message. The template *e-mail message* consisted of a covering letter (see Appendix E) which

- introduced the research project
- explained the purposes of the project
- invited the recipient to participate in the project
- addressed ethical issues of confidentiality and anonymity
- provided a link to the specialist-designed web site containing the questionnaire (see Appendix F)
- provided a user name and password for security reasons to access the web site
- provided an e-mail link to the researcher
- provided the researcher's contact details should the respondent have any queries

The covering letter in the e-mail message was sent personally by MEDpages to each general practitioner on their database in either Afrikaans or English depending on the preferred language of communication as listed on their database. Although the recipient's name was not repeated in the letter itself, the researcher believed that addressing the e-mail individually to each recipient could have played a role in the recipient's willingness to complete the questionnaire. In a study done by Heerwegh,

Vanhove, Matthijs and Loosveldt (2005:87) it was found that personalisation indeed increased the response rate. They, however, addressed each recipient individually in the salutation of the letter (Heerwegh *et al.*, 2005:88).

On opening the *web page* (see Appendix F) the respondent

- had an option of completing the questionnaire in either English or Afrikaans
- could again access the covering letter (available in both English and Afrikaans)
- could open the questionnaire by clicking on the appropriate button

On opening the *questionnaire* (see Appendix G) on the web site the respondent

- could indicate his/her responses by clicking in check boxes
- could alter his/her responses if necessary
- had to click on the submit button after completion of the questionnaire
- had a reset option available, clearing the responses given on the whole questionnaire

The average time to complete the questionnaire was approximately fifteen minutes. The data was transferred to a server where it was stored in Excel format without the respondent's e-mail details. The respondents thus remained anonymous, complying with ethical issues such as privacy and confidentiality. The only disclosure of e-mail addresses could occur when individual recipients choose to correspond with the researcher via e-mail.

Mertens (2003:169) considers "pretesting of questionnaires and procedures to identify problems prior to the survey" as one of the important steps to be taken in survey research. Prior to broadcasting by MEDpages, the e-mail message (including the covering letter) was sent by them to the researcher for approval. The researcher tested the links in the covering letter and completed and submitted both questionnaires (English and Afrikaans). After verifying the results of these submissions, the designer of the web site confirmed that the completed questionnaires were recorded correctly on the database. The e-mail message was

subsequently forwarded to a number of colleagues for additional pre-testing. No problems arose from these tests and approval was given to MEDpages to proceed with the broadcast.

The first broadcast went out to a total number of 6704 general practitioners listed on the database of MEDpages. A second broadcast was done approximately three weeks later to enhance the response rate, using the same database. A significant number of public holidays during March and April 2006, as well as a school holiday, dictated the interval of three weeks. In a study performed by Kittleson (1997:193) to determine how many follow-up broadcasts were required to obtain a satisfactory response rate, it was found that one follow-up broadcast could double the response rate. For this reason he suggests that a researcher should plan at least one follow-up broadcast about four to seven days after the first survey. He also concluded that more than two follow-ups would have no influence on the response rate (1997:195).

3.7.2 Questionnaire as an attachment to an e-mail message

The contact details of all Departments of Family Health Sciences at universities in South Africa were obtained from the administrative officer at the Faculty of Health Sciences of the University of Stellenbosch. The short questionnaire (discussed in 3.6.2) was attached as a Word document to an e-mail message (see Appendix J) and sent to all the faculties of Family Health or Health Sciences. The e-mail message introduced the research project and explained the purpose of the information that the questionnaire was intended to cover. The recipient was asked to forward the e-mail message to the relevant person(s) where necessary. In cases where this method was not successful, efforts were made to phone the people involved and to conduct a structured interview (using the questionnaire) by telephone.

3.7.3 Structured telephone interview

In order to set up the structured telephone interview, the administrative officers in the Departments where no response had resulted from the e-mail messages within a reasonable time frame were contacted by telephone (see 3.7.2). They were asked to identify the best person to supply authoritative information on the content of their curricula, with specific reference to psychiatry or a relevant subject. Once an

appropriate person had been identified, he or she was contacted. However, before doing so, the university contact details and the names of the persons contacted were recorded on the questionnaire. After the researcher had identified herself, the purpose of the phone call and a brief explanation of the research project were given. Only then were the structured questions posed. The person was informed that his or her right not to respond to certain questions or to be interviewed at all would be respected. The details were verified with this person. The responses from each Department were recorded on a separate questionnaire. The phone calls were not tape-recorded.

3.8 RELIABILITY AND VALIDITY

The purpose of this study was to explore the components of familiarity, attitudes and practices with regard to ADHD and not to develop a questionnaire that could measure the constructs of familiarity, attitudes and practices of general practitioners relating to ADHD in children and adults. The nature of the response options was not ideal for measuring these components. The implication was that reliability and validity were not that relevant in this study. The extent of reliability and validity in this study could, however, be increased by the inclusion of selected questions from existing questionnaires used in previous research studies (Venter, 2003, 2004; Kwasman, 1995) (see Section 3.6.1), particularly the studies of Venter (2003, 2004) performed within the South African context. The extent of congruency in the findings of this study and those of the studies of Venter could increase the reliability and validity of the questionnaire in this study. This matter will be discussed more fully in Section 4.4.

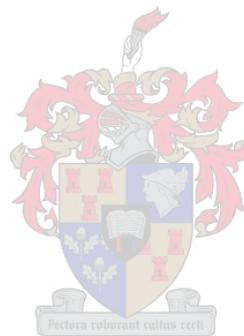
3.9 DATA ANALYSIS

The statistical analysis was performed using the Statistica Version 7.1 software. The ANOVA test was used for repeated measures analysis of variance for the Likert scale data. The McNemar test was used for two-level answers, e.g. yes/no answers. For answers on more than two levels the Stewart-Maxwell test was used. The reliability and validity analysis was performed by means of the Cronbach alpha test on the components of familiarity and attitudes (the test was not performed on the component of practices as it mainly explored referral practices).

3.10 SUMMARY

In this chapter the research paradigm in which this study is situated, namely the postpositivist paradigm, and its impact on the research design and methodology, as well as ethical considerations in social research were discussed. A full description of the research instruments used to conduct this study, a web-based self-administered questionnaire, an e-mail message with an attachment and a structured telephone interview, were also described. This was followed by a detailed, differentiated description of the research procedure to collect the data including the issue of reliability and validity. The chapter concluded with an explanation of the software that was used to analyse the data.

In the next chapter a detailed discussion on the results of the study is presented.



CHAPTER 4

RESULTS OF THE STUDY: PRESENTATION AND DISCUSSION

4.1 INTRODUCTION

In this chapter a statistical analysis of the results of this survey is presented and discussed. The demographic characteristics of the respondents will be presented in Section 4.2. This will be followed in Section 4.3 by the presentation and discussion of the results of this study in accordance with the three components of familiarity, attitudes and practices with regard to ADHD researched in this study. Within each component an exposition of the descriptive statistics for each question related to the specific component will firstly be presented for both children and adults in a table format. This is followed by a discussion of these results, identifying shortcomings and contradictions and also comparing it with more or less related studies, locally and overseas. Significant differences between children and adults will also be addressed in this discussion, as well as the differences between ADHD, depression and anxiety disorders. The discussions will be elucidated with graphic representations. A short discussion of the results obtained from medical faculties of the universities in the country with regard to the training of general practitioners will be dealt with in Section 4.5. The chapter ends with a summary of the results and a concluding statement.

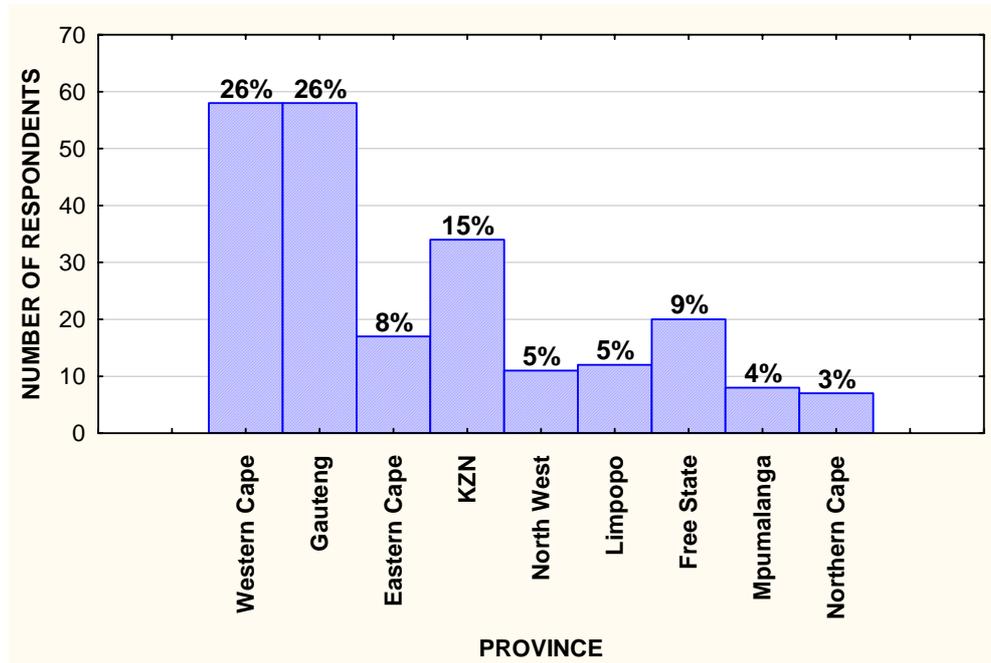
4.2 DEMOGRAPHIC DATA OF THE RESPONDENTS

Demographic details of the respondents were obtained with regard to the following: age, gender, language, the university where they were trained, number of years in practice, location of their practice (city/rural and province), the nature of their practice and the average number of children and adults presenting with ADHD seen annually.

The questionnaire was completed by 229 general practitioners. This represents a response rate of 3.4%. The implications of the low response rate will be discussed in

Section 5.3.2. A number of the recipients replied by e-mail messages that they would not be participating in the research project for one or more of the following reasons: they were not registered general practitioners, they practised abroad, they were not in practice, they did not see patients with ADHD, they did not have the time/were not interested, they were unable to access the Web site/questionnaire, they did not have the password or username. The number of respondents doubled with the second broadcast. This is congruent with the findings of McMillan and Schumacher (2006:238) discussed in Section 3.5.1 and Kittleson (1997:193) which were discussed in Section 3.7.1. The respondents did not always answer all the questions resulting in varying n-values. The majority of the respondents were between the ages of 30 and 50 (65%; n = 150), while 68% (n = 155) were males and 32% (n = 74) were females. Most of the respondents (22%; n = 50) were between 10 and 15 years in practice and 75% (n = 169) were mainly functioning in private practices. Twenty-five per cent reported that they were in mixed, academic, hospital-based and part time private practices. Sixty-four per cent (n = 145) of the respondents practise in the cities, while 36% (n = 83) practise in rural areas. The distribution with regard to the provinces where their practices are located (see Figure 4.1) shows that the majority of the respondents practise in the Gauteng and Western Provinces (26% respectively; n = 58 for each province), followed by the provinces of Kwazulu-Natal (15%; n = 34), the Free State (9%; n = 20) and the Eastern Cape (8%; n = 17). The rest (16%; n = 38) were spread over the remaining provinces.

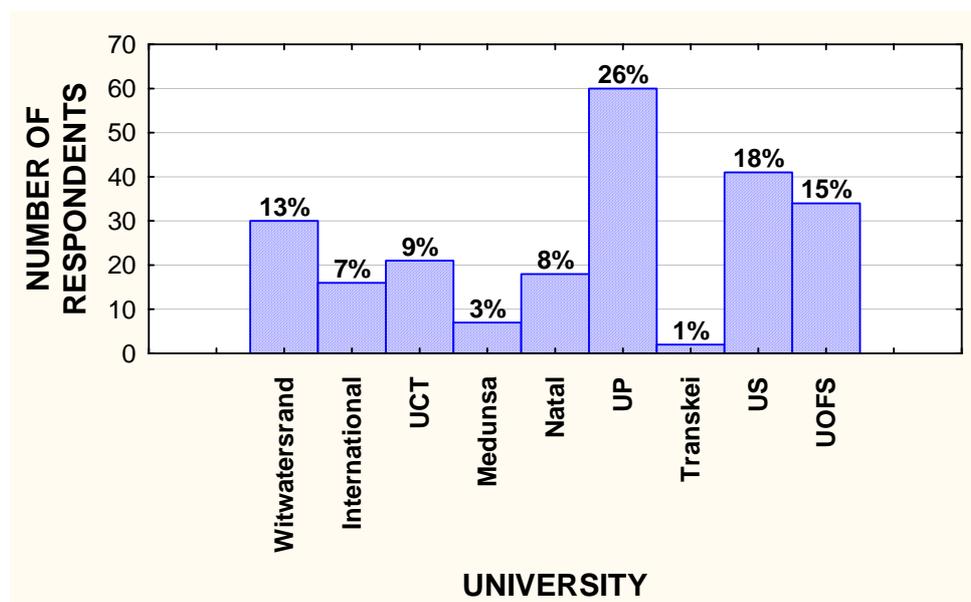
Figure 4.1:
Distribution of respondents with regard to the province in South Africa



The respondents were mainly trained (see Figure 4.2) at the University of Pretoria (26%), followed by the Stellenbosch University (18%), University of the Free State (15%) and the University of the Witwatersrand (13%). Seven per cent received their training overseas.



Figure 4.2:
Distribution with regard to the training institutions



The relationship between the average number of patients with ADHD seen and the location of practice with regard to city and rural areas are reflected in Figure 4.3 (Left panel: Children and Right panel: Adults). Extreme values were omitted in the statistical analysis presented in Figures 4.3 to obtain a less skewed portrayal. Although the p-value is slightly more than 0.05, this still clearly reveals that general practitioners in the city areas see more children with ADHD (an average of 50 children per annum) than their colleagues practising in the rural areas (an average of 18 children per annum). There was no significant difference with regard to adults (an average of 12 in the city areas and 4 in the rural areas). As Venter *et al.* (2003:13) also found, the reported numbers of patients seen per annum in the present study varied significantly between practices. A further discussion of these results will follow in Section 4.3.1 under Questions 4, 5 and 6.

Figure 4.3:
Relationship between area and average number of patients seen

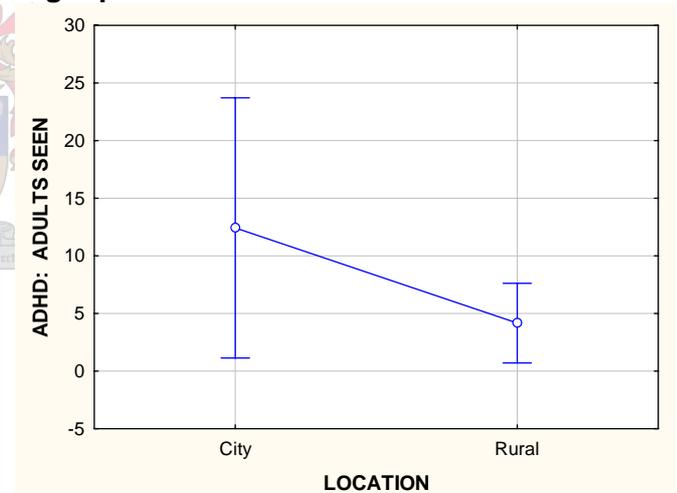
Left panel: Children



Notes:

The vertical bars denote 0.95 confidence intervals
The significant difference between children and adults is graphically expressed by the vertical differences between the points ($F = 3.6744$, $p = 0.06$)
ANOVA F-Test

Right panel: Adults



Notes:

The vertical bars denote 0.95 confidence intervals
The significant difference between children and adults is graphically expressed by the vertical differences between the points ($F = .02157$, $p = 0.88$)
ANOVA F-Test

4.3 PRESENTATION AND DISCUSSION OF THE RESULTS

It is important to note that this research used a purposive sample (as discussed in Section 3.7.1) which could affect the generalisability of the results. The findings of this study are not necessarily representative of general practitioners in South Africa and so care should thus be taken in generalising them. It should be emphasised that reference to the general practitioners in South Africa in the following discussion is to those in the study only.

Each of the tables providing descriptive statistics and explanatory comment will offer the following information (from left to right) the question number, the question, whether children or adults are involved (C/A), the number of respondents (n) and the corresponding percentage (%) obtained for each answer, distinguishing between children and adults, the p-value explicating the difference between the mean scores for children and adults and the exposition of the results.

4.3.1 Presentation and exposition of results with regard to *Familiarity*



Table 4.1: Results per question with regard to children and adults for the component *Familiarity*

(Key: C = Children; A = Adults)

NO.	QUESTION	C/A	RESPONSES								P-VALUE	EXPOSITION OF RESULTS
			Very		Average		Limited		Not at all			
			n	%	n	%	n	%	n	%		
1	How knowledgeable are you with regard to the following:											
1.1	ADHD	C	46	20	130	58	47	21	2	1	<0.01	It seems as though the GP's in this sample consider themselves to be reasonably knowledgeable (58%) with regard to ADHD in children while only 20% consider themselves to be very knowledgeable. This seems to be more or less the same for depression (54% and 17% respectively) and GAD (52% and 14% respectively) with regard to children. With regard to adults more than half feel very knowledgeable with regard to depression (64%) and GAD (54%), as opposed to ADHD where only 9% feel very knowledgeable. According to the Stewart-Maxwell test the respondents reported to know significantly more about depression and GAD in adults and significantly less with regard to ADHD in adults (see Figures 4.4, 4.5 and 4.6).
		A	19	9	76	34	99	45	28	13		
1.2	Depression	C	39	17	121	54	59	26	4	2	<0.01	
		A	140	64	72	33	8	4	0	0		
1.3	GAD	C	32	14	114	52	65	29	10	5	<0.01	
		A	117	54	81	37	20	9	0	0		
2	How confident are you in diagnosing the following:											
2.1	ADHD	C	61	27	100	44	50	22	14	6	<0.01	The same tendencies reflected in the responses to question 1 were identified here. With regard to children the GP's reported that they are reasonably to very (71%) confident in diagnosing ADHD, depression (66%) and GAD (62%). Once again the majority feel reasonably to very confident to diagnose depression (97%) and GAD (93%), but significantly less confident to diagnose ADHD (40%) in adults. Statistical analysis (Stewart-Maxwell Test) revealed a significantly higher confidence level to diagnose ADHD in children. With regard to depression and GAD the GP's were significantly more confident to diagnose these conditions in adults than ADHD.
		A	21	10	67	30	103	47	29	13		
2.2	Depression	C	43	19	104	47	67	30	9	4	<0.01	
		A	159	72	56	25	6	3	0	0		
2.3	GAD	C	34	15	104	47	71	32	11	5	<0.01	
		A	131	60	73	33	15	7	1	0		

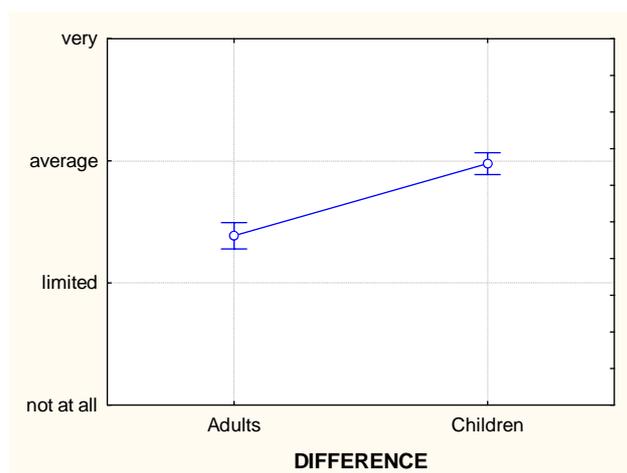
NO.	QUESTION	C/A	RESPONSES								P-VALUE	EXPOSITION OF RESULTS	
3	Did your initial training prepare you adequately for your practice with regard to the following:		<i>Greatly</i>		<i>Average</i>		<i>Not at all</i>					More or less half of the GP's in this sample are of the opinion that they were not adequately trained with regard to ADHD (54%), depression (44%) and GAD (51%) in children. A significantly higher percentage (76%) reported that they were not at all trained in ADHD with regard to adults. Their training seemed to equip them significantly better with regard to depression (43%) and GAD (31%) in adults. Only 6% felt that they were well trained in ADHD with regard to children and 1% with regard to adults.	
			<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>					
3.1	ADHD	C	14	6	90	40	120	54			<0.01		
		A	3	1	48	22	164	76					
3.2	Depression	C	23	10	102	46	97	44			<0.01		
		A	95	43	108	49	16	7					
3.3	GAD	C	13	6	95	43	114	51			<0.01		
		A	67	31	123	56	29	13					
4	How do you obtain more knowledge with regard to:		<i>Workshops</i>		<i>Lectures</i>		<i>Self study</i>		<i>Consultation</i>		<i>Other</i>		GP's reported that they increase their knowledge on ADHD, depression and GAD with regard to both children (73%, 70% and 65% respectively) and adults (63%, 74% and 71% respectively) predominantly by means of self study. Second in line are attending lectures and consulting with others. They are less likely to attend workshops. A limited number indicated other means (which is not further explored in this study) to broaden their knowledge base. In respect of ADHD the GP's spend significantly more time attending workshops, lectures and doing self study with regard to children than to adults. All these significant differences were determined by utilizing the McNemar test.
			<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	
4.1	ADHD	C	63	28	97	42	168	73	104	45	29	13	
		A	40	17	72	31	144	63	93	41	26	11	
			<0.01		<0.01		<0.01		0.11		0.63		
4.2	Depression	C	68	30	117	51	160	70	106	46	25	11	
		A	90	39	126	55	169	74	103	45	23	10	
			<0.01		0.19		0.19		0.71		0.75		
4.3	GAD	C	59	26	106	46	149	65	100	44	22	10	
		A	81	35	120	52	163	71	96	42	22	10	
			<0.01		0.04		0.04		0.60		0.75		

NO.	QUESTION	C/A	RESPONSES						P-VALUE	EXPOSITION OF RESULTS				
			0		1-2		3-4				5-6		7+	
			n	%	n	%	n	%	n	%	n	%		
5	How many articles/papers have you read on ADHD?	C	9	4	56	25	55	25	39	17	64	29	<0.01	Twenty-nine percent GP's reported that they have read more than seven articles/papers on ADHD in children compared to only 7% with regard to adults. More or less half of them reported that they have read between 1 and 4 articles with regard to children (50%) and adults (56%). Statistical analysis with the Stewart-Maxwell test indicated that GP's read significantly more articles/papers on ADHD in children than in adults.
		A	73	33	91	41	34	15	8	4	16	7		
6	How many workshops/lectures have you attended on ADHD?		0		1-2		3-4		5+				<0.01	Thirty percent of the GP's attended less than 3 workshops/lectures on ADHD with regard to children while 40% reported no attendance at all. Seventy percent reported that they do not attend workshops/lectures with regard to adults while only 1% indicated that they have attended five or more. They attend significantly more workshops/lectures on ADHD in children than in adults.
		C	88	40	65	30	40	18	26	12				
		A	153	70	58	27	4	2	3	1				
7	How often do you consult with other professionals on ADHD		Weekly		Monthly		Semi-annually		Annually		Never		<0.01	GP's are more likely to consult with other professionals with regard to children with ADHD. Only 12% never consult with other professionals as opposed to 47% with regard to adults. Sixty-two percent indicated that they consult with other professionals with regard to children semi-annually/annually. The corresponding figure for adults is 46%. GP's tend to consult other professionals significantly more often with regard to children.
		C	12	5	47	21	73	33	63	29	26	12		
		A	2	1	13	6	39	18	61	28	104	47		
8	Do you have a need to know more about ADHD?		Yes		No		Uncertain						<0.01	The majority of GP's indicated that they have a need to know more about ADHD with regard to children (81%) and adults (89%). Only 9% and 5% respectively indicated that they have no need to expand their knowledge.
		C	179	81	19	9	24	11						
		A	195	89	12	5	13	6						
9	Do you have a need for an easy-to-use checklist to diagnose ADHD?		Yes		No		Uncertain						0.38	More than 80% of the GP's indicated that a screening tool will be very helpful in the diagnosis of ADHD with regard to both children and adults. Fourteen percent (children) and 12% (adults) indicated that they do not have a need for a checklist.
		C	182	83	31	14	7	3						
		A	185	84	26	12	9	4						

4.3.1.1 Discussion of results per question with regard to Familiarity

Question 1: Knowledge

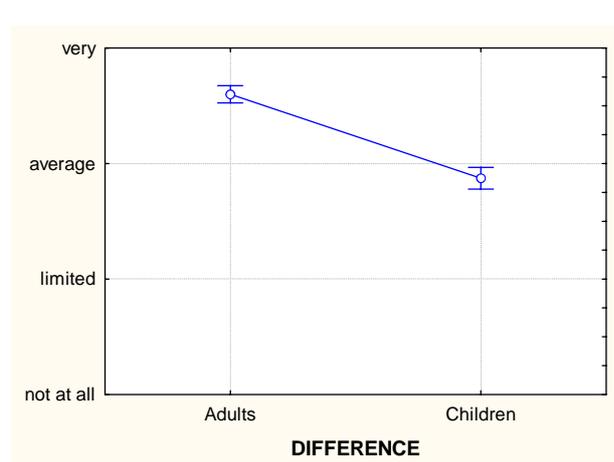
Figure 4.4:
Comparison between the mean scores for children and adults with regard to reported knowledge about ADHD



Notes:

The vertical bars denote 0.95 confidence intervals
The significant difference between children and adults is graphically expressed by the vertical differences between the points ($p < 0.01$)
Stewart-Maxwell test used in analysis

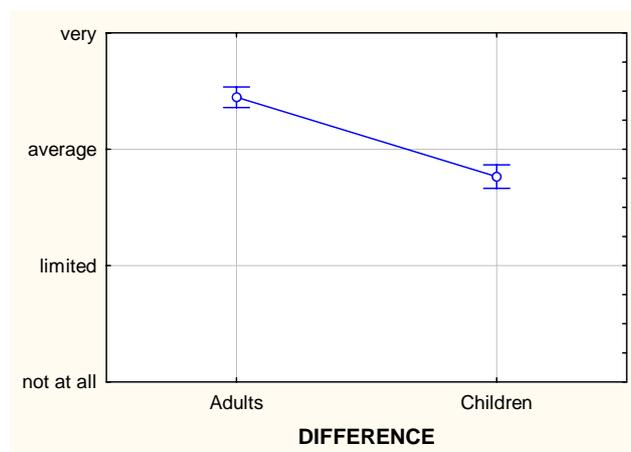
Figure 4.5:
Comparison between the mean scores for children and adults with regard to reported knowledge about depression



Notes:

The vertical bars denote 0.95 confidence intervals
The significant difference between children and adults is graphically expressed by the vertical differences between the points ($p < 0.01$)
Stewart-Maxwell test used in analysis

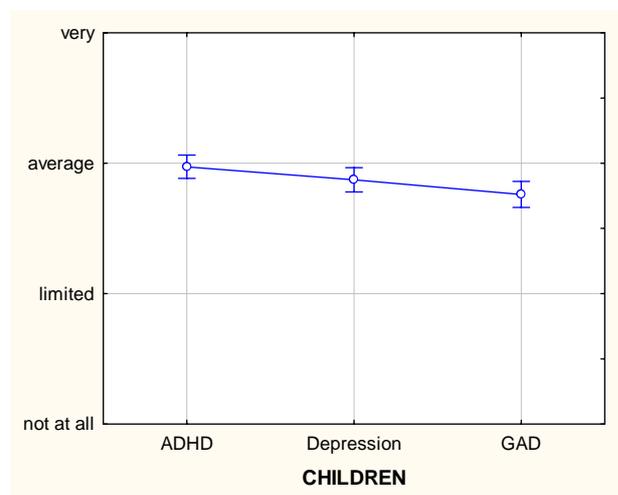
Figure 4.6:
Comparison between the mean scores for children and adults with regard to reported knowledge about generalised anxiety disorders



Notes:

The vertical bars denote 0.95 confidence intervals
The significant difference between children and adults is graphically expressed by the vertical differences between the points ($p < 0.01$)
Stewart-Maxwell test used in analysis

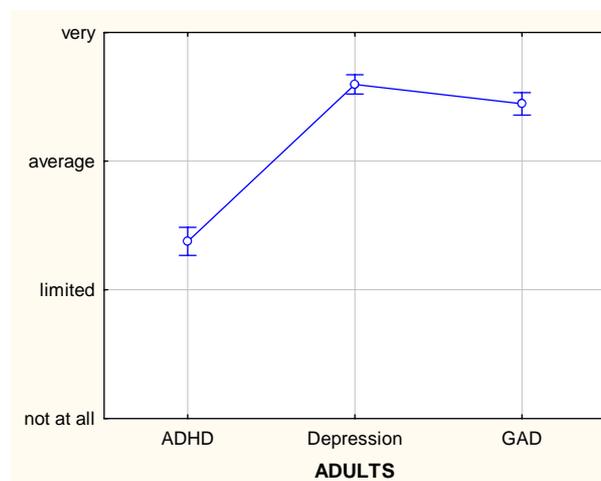
Figure 4.7:
Comparison between the mean scores for ADHD, depression and GAD with regard to reported knowledge (*children*)



Notes:

The vertical bars denote 0.95 confidence intervals
The significant difference between children and adults is graphically expressed by the vertical differences between the points ($p < 0.01$)
Stewart-Maxwell test used in analysis

Figure 4.8:
Comparison between the mean scores for ADHD, depression and GAD with regard to reported knowledge (*adults*)



Notes:

The vertical bars denote 0.95 confidence intervals
The significant difference between children and adults is graphically expressed by the vertical differences between the points ($p < 0.01$)
Stewart-Maxwell test used in analysis

With regard to children, the majority (78%) of general practitioners in South Africa in this study reported an average (57%)/good (21%) knowledge with regard to ADHD in children. It seems as though their knowledge base of ADHD, depression and GAD in children was more or less the same for the three conditions (see Figure 4.7). However, the same cannot be said with regard to ADHD in adults. In their opinion, general practitioners knew significantly more about depression and GAD in adults than about ADHD in adults (see Figure 4.8). It was also clear that general practitioners were significantly more knowledgeable about ADHD in children than in adults (see Figure 4.4; $p < 0.01$). The reverse was, however, true for depression and GAD (see Figure 4.5; $p < 0.01$ and Figure 4.6; $p < 0.01$). These differences could possibly reflect the foci of their training and the number of patients treated for each of these conditions. The extent of exposure to these conditions by means of training and treatment of patients will inevitably expand their knowledge base.

It is important to bear in mind that this survey did not intend to measure actual knowledge but explored the opinions of general practitioners in a self-report format.

The findings with regard to adults are congruent with the findings (as made known in a press release) of Adler (2003:19), who conducted a study on adult ADHD among primary care physicians in America. In contrast to the findings of the present study Shaw *et al.* (2003:132) found that the general practitioners in Australia did not feel knowledgeable about ADHD in children. In their study in Scotland, England and Wales, Kirby *et al.* (2005:125) found that general practitioners knew less than teachers, but the knowledge base of both groups was limited. Kirby *et al.* (2005:126) contend that in order to lessen the risk of further emotional and psychological problems both general practitioners and teachers should have at least a basic knowledge of ADHD.

Question 2: Confidence in diagnosing ADHD, depression and GAD

The same tendencies reflected in the responses with regard to knowledge about ADHD, depression and GAD were identified in the responses with regard to the general practitioners' confidence levels with regard to diagnosing ADHD in both children and adults (see Table 4.1, question 2). It is assumed that having a secure knowledge base will influence the level of confidence with which the doctor can make a diagnosis. The confidence level with regard to diagnosing ADHD in adults (60% indicated limited/not at all) was more or less similar to the findings of the study of Adler (2003:19) who reported that 48% did not feel confident in diagnosing ADHD in adults. In their research study Shaw *et al.* (2003:133) found that the general practitioners in Australia were concerned about their limited capacity to diagnose ADHD in children. According to Kirby *et al.* (2005:126) and Resnick (2000:23) early and correct identification of ADHD impacts on the nature of support and intervention. This can play a significant role in the prevention of long-term difficulties.

Question 3: Training

Figure 4.9:
Training with regard to ADHD
(children and adults)

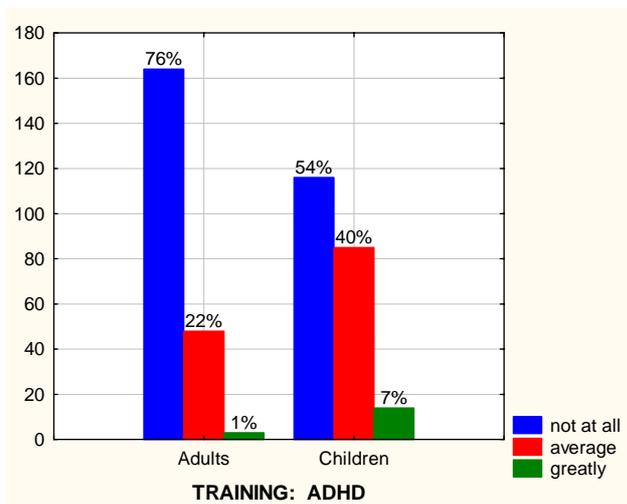


Figure 4.10:
Comparison between the mean scores for *children and adults* with regard to training in ADHD



Notes:
The vertical bars denote 0.95 confidence intervals
The significant difference between children and adults is graphically expressed by the vertical differences between the points ($p < 0.01$)
Stewart-Maxwell test used in analysis

Figure 4.11:
Training with regard to depression
(children and adults)

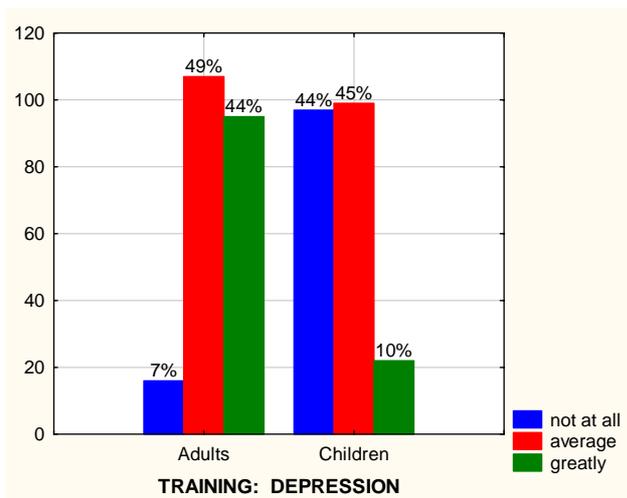


Figure 4.12:
Comparison between the mean scores for *children and adults* with regard to training in depression



Notes:
The vertical bars denote 0.95 confidence intervals
The significant difference between children and adults is graphically expressed by the vertical differences between the points ($p < 0.01$)
Stewart-Maxwell test used in analysis

Figure 4.13:
Training with regard to GAD
(*children and adults*)

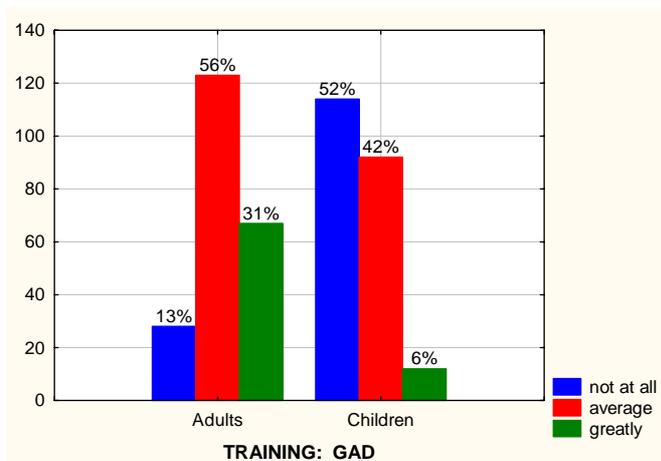
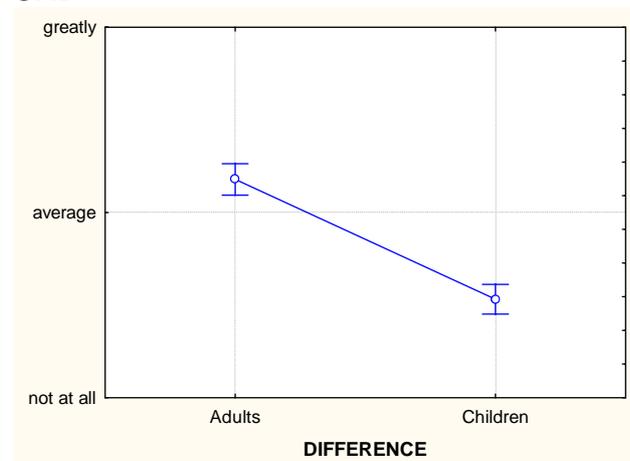


Figure 4.14:
Comparison between the mean scores for
***children and adults* with regard to training in**
GAD



Notes:

The vertical bars denote 0.95 confidence intervals
 The significant difference between children and adults is graphically expressed by the vertical differences between the points ($p < 0.01$)
 Stewart-Maxwell test used in analysis

It is clear that the majority of the general practitioners in South Africa in this study consider that they had not been adequately trained with regard to ADHD (see Figure 4.9), depression (see Figure 4.11) and GAD (see Figure 4.13) in children and even more so with regard to ADHD in adults. They seemed to feel significantly better equipped by their training in depression and GAD in adults (see Figures 4.12 and 4.14). The latter confirms the findings of the study conducted by Adler (2003:19), although a greater percentage of general practitioners in South Africa (76% as opposed to 64% in the Adler study) responded that their training did not prepare them at all for their practices with regard to ADHD in adults. In the qualitative study conducted by Shaw *et al.* (2003:132) general practitioners in Australia also indicated that their training failed to equip them for diagnosing and managing children with ADHD and that diagnosis and management of these patients should occur in a multi-disciplinary clinic until general practitioners are better trained. A study performed by Lian *et al.* (2003:397) in Singapore found that general practitioners were "insufficiently equipped with the necessary knowledge and skills". Venter *et al.* (2003:17) argues that if it is expected from general practitioners in South Africa to diagnose and

manage persons with ADHD it is important that their training prepare them for this task.

Questions 4, 5, 6 and 7: Obtaining knowledge

Figure 4.15:
Obtaining knowledge in respect of children

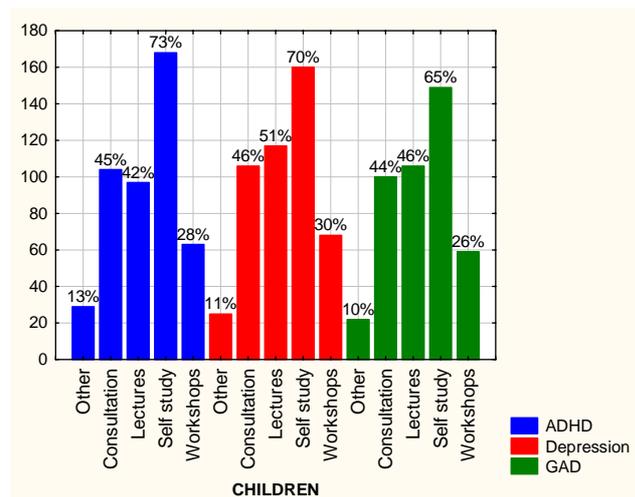


Figure 4.16:
Obtaining knowledge in respect of adults

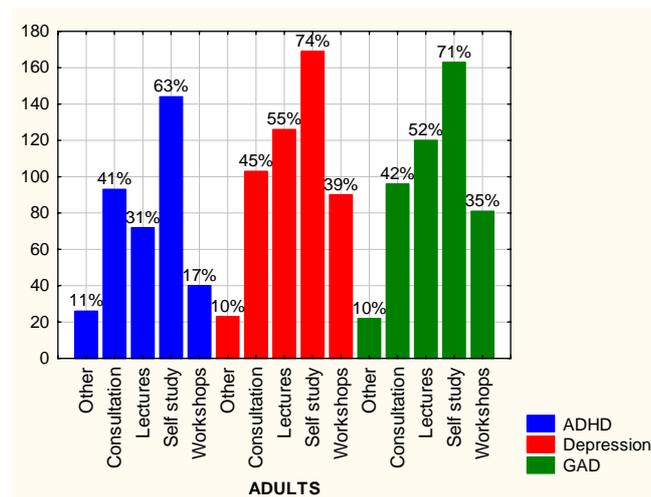
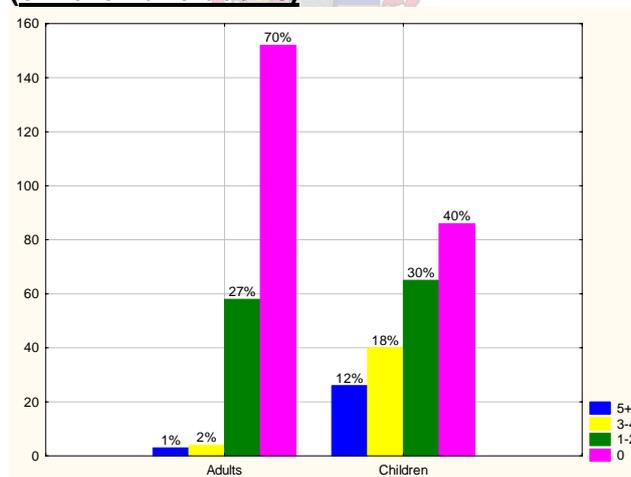


Figure 4.17:
Workshops/Lectures attended
(children and adults)



Notes:
Stewart-Maxwell test used
P<0.01

The tendency of general practitioners to follow the route of self study (see Figures 4.15 and 4.16) to increase their knowledge about ADHD, depression and GAD with regard to both children and adults can probably be attributed to the fact that they can do this in their own time, also allowing them to do more goal directed reading on

selected topics. The demands of general practice made it less likely that they would attend workshops. Apart from time constraints, workshops are usually presented during consulting hours. In the researcher's view, workshops and lectures on ADHD in adults are rarely presented in South Africa at present. This could account for the relatively low scores (see Figure 4.17). The higher percentages with regard to obtaining knowledge in respect of depression and GAD in adults (by means of workshops and lectures) (see Figure 4.16) could be an indication that these conditions are more frequently addressed in workshops and lectures. Although not explored in this study, it is also possible that general practitioners see more patients with depression and anxiety disorders and are thus more inclined to expand their knowledge of these areas to increase their ability to diagnose and manage these patients effectively. Within a tight time frame general practitioners would probably prioritise continued medical education in respect of depression and anxiety disorders (a further discussion of this issue will follow in Section 4.6). Further investigation is obviously necessary.

There is not a significant difference in the consultation rate in either group with regard to ADHD, depression and GAD (see Figures 4.15 and 4.16). It is interesting to note that almost half of the respondents (47%) never consult other professionals with regard to adult ADHD (see Table 4.1, Question 7). A lower consultation rate with regard to depression and GAD as opposed to ADHD in respect of adults could account for the tendency to consult other professionals significantly more often due to a lack of experience and thus knowledge with regard to adult ADHD (see Figure 4.16).

Figure 4.18:
Articles read on ADHD
(*children and adults*)

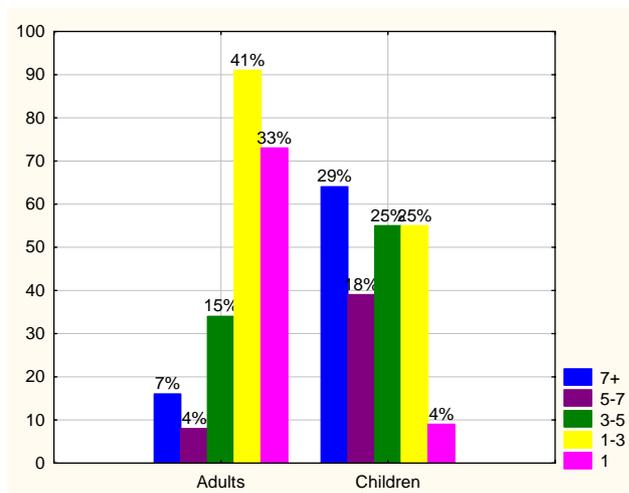
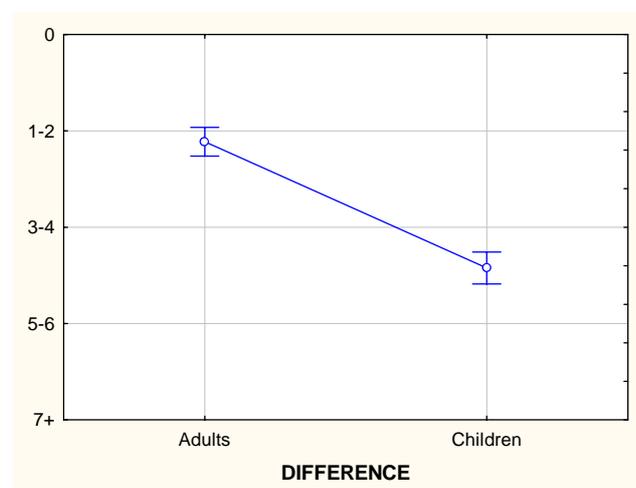


Figure 4.19:
Comparison between the mean scores for
children and adults with regard to articles
read on ADHD

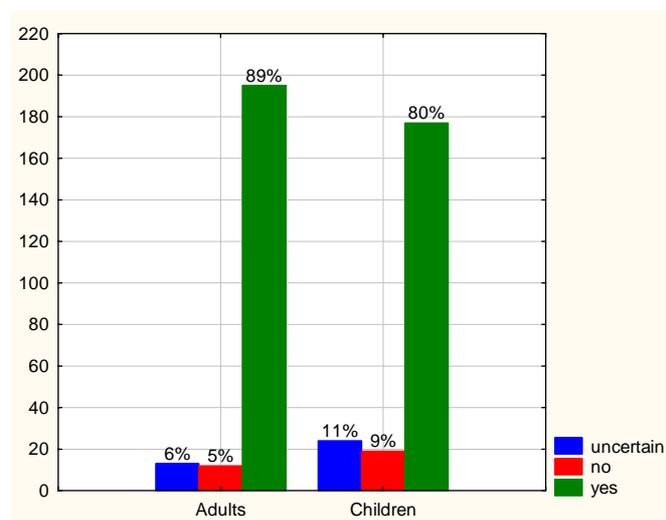


Notes:
The vertical bars denote 0.95 confidence intervals
The significant difference between children and adults is graphically expressed by the vertical differences between the points ($p < 0.01$)
Stewart-Maxwell test used in analysis

Although only 29% indicated that they had read more than seven articles on ADHD in children (which is in a sense contradictory to the reported 73% who prefer to obtain knowledge about ADHD in children by means of self study) (see Figure 4.18), it was evident in this study that general practitioners in South Africa read significantly more on ADHD with regard to children (see Figure 4.19). This could be because fewer adults with ADHD consult them in their practices (see Section 4.2), and so general practitioners have a smaller need for more information on this topic.

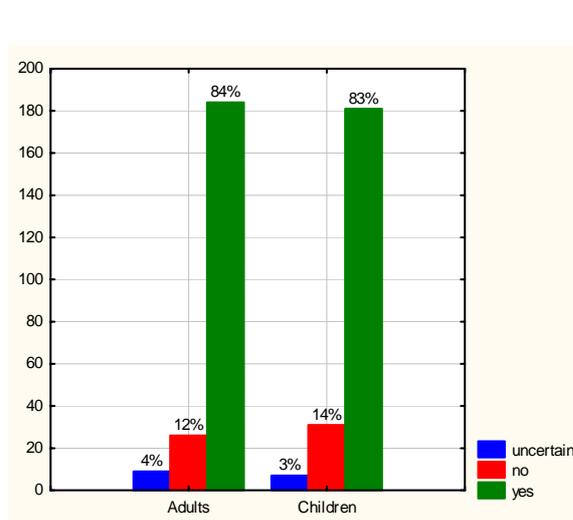
Questions 8 and 9: Need for knowledge and screening tool

Figure 4.20:
Need to know more about ADHD
(*children and adults*)



Notes:
Stewart-Maxwell test used
P<0.01

Figure 4.21:
Need for screening tool
(*children and adults*)



Notes:
Stewart-Maxwell test used
P=0.38

The reported relatively low knowledge and confidence levels with regard to adult ADHD (see Table 4.1, questions 1 and 2), the low attendance rate of workshops and lectures (see Figure 4.15), reported insufficient training (see Figure 4.9) and a low reading rate (see Figure 4.18) may partially explain the substantial need among general practitioners to obtain more knowledge about ADHD (slightly greater need with regard to adults (89%)) (see Figure 4.20). This need probably coincides with the significant call for a screening tool to diagnose ADHD in both children and adults (83% and 84% respectively) (see Figure 4.21). The result obtained for adults is confirmed by the study conducted by Prof Lenard Adler (2003:19) which reports that 85% of the primary care physicians expressed the need for an easy-to-use-screening tool and that they felt they would be able to play a more active role with regard to diagnosis and management of adults with ADHD if such a screening tool was available. The general practitioners involved in the study conducted by Shaw *et al.* (2003:132) indicated that a screening tool could aid them in differentiating patients who would benefit from medication from those who would not. A screening tool can provide greater certainty and can be reassuring for the general practitioner particularly if there are expectations of a positive diagnosis of ADHD (Shaw *et al.*, 2003:133).

4.3.2 Presentation and exposition of results with regard to *Attitudes*

Table 4.2: Results per question with regard to children and adults for the component *Attitude*

(Key: C = Children A = Adults)

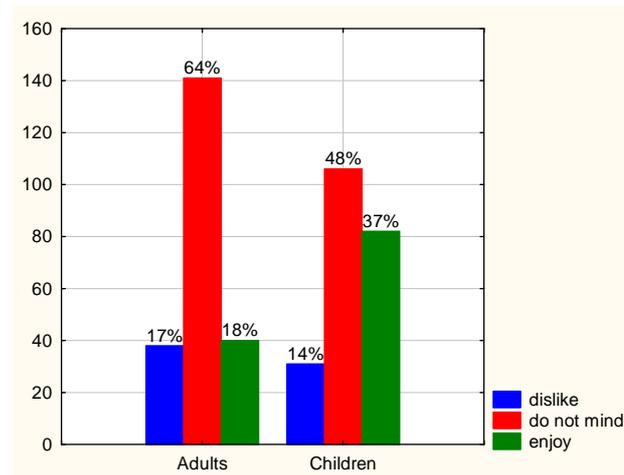
NO.	QUESTION	C/A	RESPONSES						P-VALUE	EXPOSITION OF RESULTS			
			Enjoy		Do not mind		Dislike						
			n	%	n	%	n	%					
10	How do you feel about treating patients with ADHD?	C	84	38	107	48	31	14	<0.01	Thirty-eight percent of the GP's enjoy treating children with ADHD. They find it less enjoyable to treat adults (18%). Forty-eight percent indicated that they do not mind treating children with ADHD compared to 64% in the case of adults. Less than 20% indicated that they dislike treating children and adults with ADHD. The analysis indicates that GP's are in general more neutral with regard to treating adults with ADHD.			
		A	40	18	141	64	38	17					
11	Should GP's be able to diagnose ADHD?		Yes		No		Uncertain		0.03	The majority of GP's indicated that they should be able to diagnose ADHD in both children (90%) and adults (85%). GP's who felt that they should not diagnose ADHD, or felt uncertain, preferred that this is done by a psychiatrist (24%) or pediatrician (21%) in the case of children. With regard to adults the majority preferred that a psychiatrist (56%) should diagnose ADHD. Thirty-four percent indicated that children should be diagnosed by others (not further explored in this study) compared to 28% with regard to adults. Fourteen percent are of the opinion that a psychologist should diagnose children, which is more or less the same for adults (13%).			
		C	198	90	17	8	5	2					
		A	189	85	18	8	15	7					
12	If your response to question 11 was "NO", who do you think should do it?	C	Psychiatrist		Psychologist		Pediatrician		Neurologist		Other		0.07
		A	7	24	4	14	6	21	2	7	10	34	
13	Should GP's initiate medical treatment for patients with ADHD?		Yes		No		Uncertain		0.09	Just over half of the GP's was of the opinion that they should initiate medical treatment with regard to children (59%) and adults (54%) while a third felt that they should not do it (32%). A third of the number of GP's who indicated that they should not initiate medical treatment, or were uncertain, would rather prefer that a psychiatrist (35%) or a pediatrician (36%) initiate medical treatment with regard to children. A significant 67% preferred that a psychiatrist should do this with regard to adults.			
		C	130	59	70	32	21	10					
		A	116	54	68	32	30	14					
14	If your response to question 13 was "NO", who do you think should do it?	C	Psychiatrist		Psychologist		Pediatrician		Neurologist		Other		<0.01
		A	28	35	6	8	29	36	10	13	7	9	
			Psychiatrist		Psychologist		Pediatrician		Neurologist		Other		
			1	3					1	3	9	28	

NO.	QUESTION	C/A	RESPONSES								P-VALUE	EXPOSITION OF RESULTS
			Yes		No		Uncertain		Other			
			n	%	n	%	n	%	n	%		
15	Are there sufficient educational opportunities for GP's with regard to ADHD?	C	47	21	136	62	36	16			<0.01	Almost two-thirds (62%) of the GP's indicated that educational opportunities in respect of children with ADHD are insufficient while 78% of them indicated the same with regard to adults. Only 21% felt that educational opportunities with regard to children were sufficient compared to 5% with regard to adults. There seems to be a significant need for educational opportunities with regard to adults.
		A	10	5	163	78	35	17				
16	Do you consider medication as the most effective treatment option for ADHD?	C	119	54	43	20	38	17	20	9	<0.01	Significantly more (54%) of the respondents indicated that they consider medication as the most effective treatment option in respect of children while a third (35%) said the same for adults. A fifth maintained the opposite. GP's were clearly more uncertain about medication as the most effective treatment option with regard to adults (42%) as opposed to children (17%).
		A	78	35	40	18	93	42	10	5		
17	What do you consider as barriers in the effective management of patients with ADHD?		Yes		No		Sometimes		Don't know			With regard to children the main problem area was identified as uninformed parents (70%). Almost half of the respondents identified coordination of interventions (48%), liaison with schools (48%), difficult parents (50%), interdisciplinary contact (47%) and lack of own knowledge (46%) as barriers in the effective management of ADHD. More than half indicated that uninformed patients (57%), uninformed teachers (58%), limited funds of parents (61%) and time spent with these patients (54%) were problem areas. The results with regard to adults revealed that most of the GP's considered uninformed patients (64%) and the GP's own lack of knowledge about ADHD (63%) as barriers. Coordination of interventions (42%), uninformed family members (57%) and interdisciplinary contact (47%) were more or less the same as for children with a few exceptions: It seems as though limited funds (48%) is less of a problem than with children. Lack of the GP's own knowledge about ADHD seems to be more dominant with adults (63%). The "Don't know" option is significantly more often chosen with regard to adults across the whole spectrum of possible barriers presented in the questionnaire.
17.1	Coordination of interventions	C	105	48	26	12	69	31	21	10	<0.01	
		A	92	42	32	15	45	21	50	23		
17.2	Liaison with schools/teachers	C	107	48	46	21	59	27	9	4		
17.3	Difficult parents	C	110	50	30	14	74	33	7	3		
17.4	Uninformed parents	C	154	70	11	5	49	22	6	3	<0.01	
17.2	Uninformed family members	A	125	57	32	15	31	14	31	14		
17.5	Uninformed patients	C	125	57	35	16	54	24	7	3	<0.01	
17.3	Uninformed teachers	A	141	64	15	7	30	14	33	15		
17.6	Uninformed teachers	C	129	58	24	11	60	27	8	4		
17.7	Time consuming	C	120	54	44	20	49	22	8	4	<0.01	
17.4	Interdisciplinary contact	A	126	58	35	16	26	12	30	14		
17.8	Lack of own knowledge ré	C	104	47	40	18	66	30	10	5	<0.01	
17.5	ADHD	A	105	47	33	15	46	21	36	16		
17.9	Limited funds	C	101	46	62	28	56	25	2	1	<0.01	
17.6		A	132	63	28	13	40	19	8	4		
17.10		C	134	61	15	7	66	30	6	3	<0.01	
17.7		A	105	48	20	9	60	28	33	15		

4.3.2.1 Discussion of results per question with regard to Attitude

Question 10: Feeling about treating patients with ADHD

Figure 4.22:
Feeling about treating patients with ADHD
(children and adults)

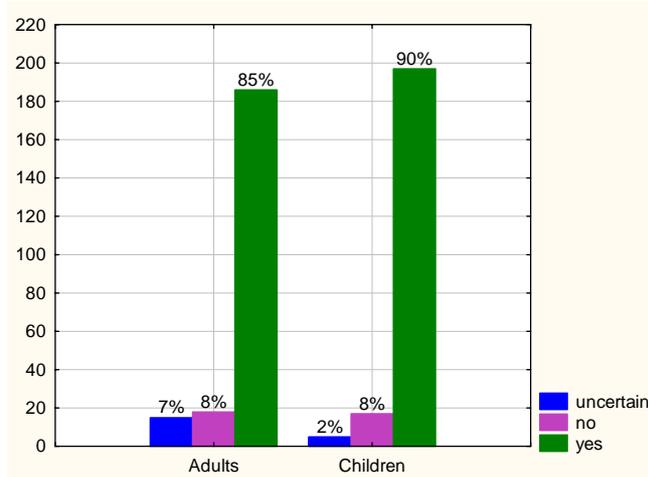


Notes:
 Stewart-Maxwell test used in analysis
 $P < 0.01$

The majority of GPs enjoyed or did not mind treating children with ADHD (86%), but found treating adults significantly ($p < 0.01$) less enjoyable (see Figure 4.22). This may be that they did not feel very confident about diagnosing ADHD in adults probably because of a lack of knowledge. Venter *et al.* (2003:13) found that 25% of the respondents enjoyed treating children with ADHD while 25% disliked it. The current study revealed a slightly higher percentage (38%) for general practitioners who enjoy treating these patients. Their study among psychiatrists and paediatricians in South Africa by Venter *et al.* (2004:13) yielded more or less similar results with regard to both professions where more than a third in each group indicated that they enjoyed seeing children with ADHD. It seems as though a significantly higher percentage (66%) of paediatricians enjoyed seeing patients with ADHD in the study conducted by Kwasman *et al.* (1995:1213).

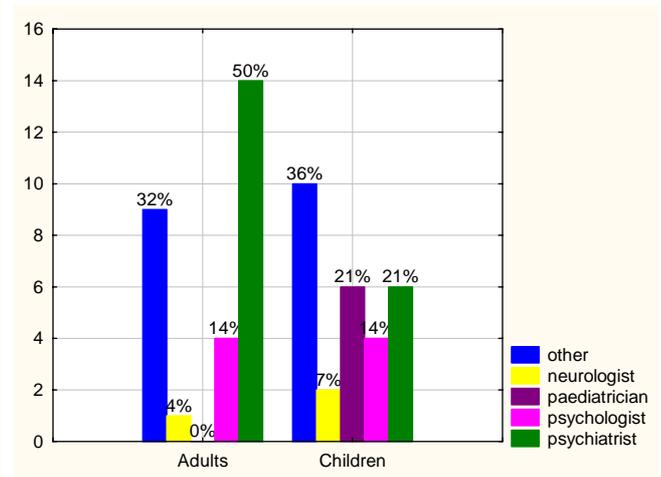
Questions 11, 12 and 15: Diagnosis and educational opportunities

Figure 4.23:
GPs should diagnose ADHD
(*children and adults*)



Notes:
Stewart-Maxwell test used in analysis
P=0.03

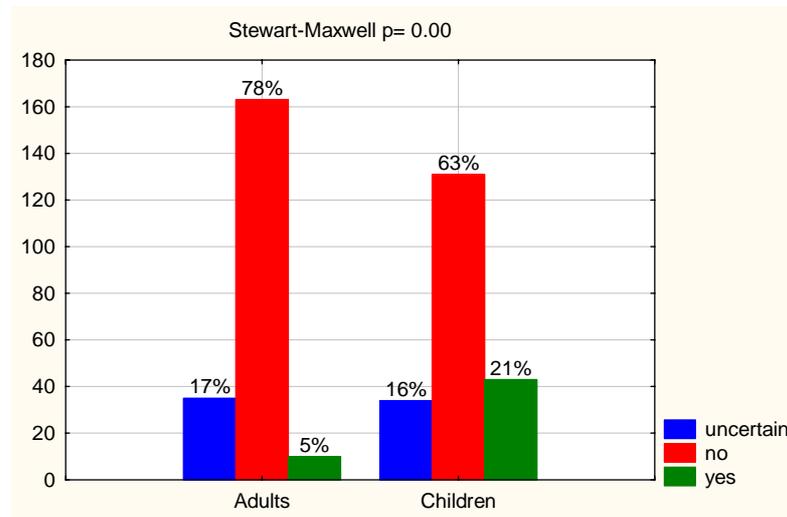
Figure 4.24:
If not GPs, who should diagnose ADHD
(*children and adults*)



Notes:
Stewart-Maxwell test used in analysis
P=0.07

A significant majority of GPs indicated that they considered it important that they should be able to diagnose ADHD in both children (90%) and adults (85%) (see Figure 4.23). This is also supported by Shaw *et al.* (2003:129) who state that consensus bodies had recommended that general practitioners should be able to diagnose patients with ADHD and then refer patients at the severe end of the spectrum of ADHD disorders, while they should be able to treat patients with less severe symptoms themselves. The assumption that it is their responsibility to diagnose ADHD, together with the results of Questions 1 and 2 with regard to knowledge and confidence and the results of question 8 with regard to the need to know more about ADHD into account, makes it imperative for general practitioners in South Africa to be better equipped to diagnose and manage children and adults with ADHD. According to Shaw *et al.* (2003:133-134), it is important that an early diagnosis should be made to "ameliorate the gradual accumulation of adverse processes and events that increase the risk of serious psychopathology later in life". They stress the importance of further research to determine the barriers to efficient diagnosis and treatment by general practitioners.

Figure 4.25:
Educational opportunities
(children and adults)

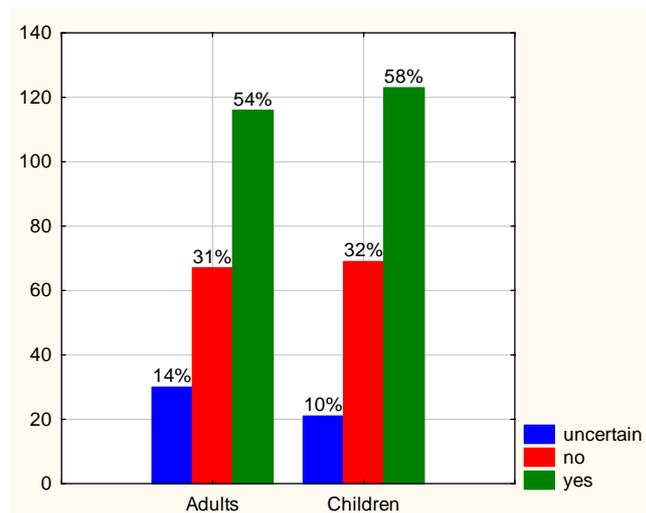


Notes:
 Stewart-Maxwell test used in analysis
 $P < 0.01$

However, almost two-thirds (63%) of the respondents indicated that educational opportunities in respect of children with ADHD are insufficient. Significantly more (78%; $p < 0.01$) of them indicated a need for educational opportunities with regard to adults with ADHD (see Figure 4.25). This clearly highlights the need among general practitioners in South Africa for more opportunities to broaden their knowledge base of ADHD, especially with regard to adults.

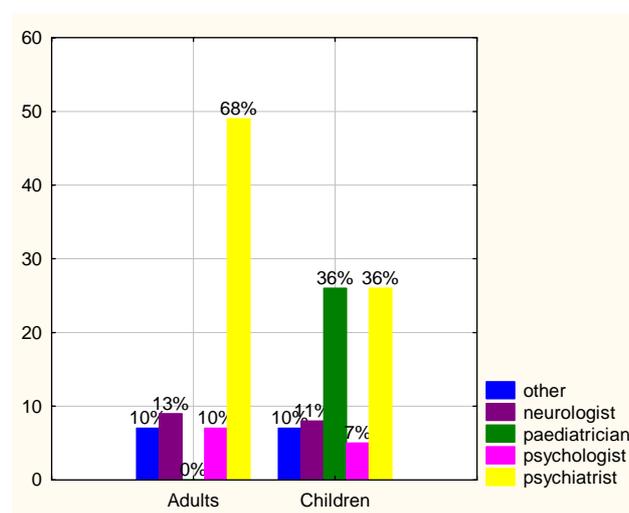
Questions 13 and 14: Initiation of medical treatment

Figure 4.26:
GPs should initiate treatment of ADHD
(*children and adults*)



Notes:
Stewart-Maxwell test used in analysis
P=0.09

Figure 4.27:
If not GPs, who should initiate treatment of
ADHD (*children and adults*)?



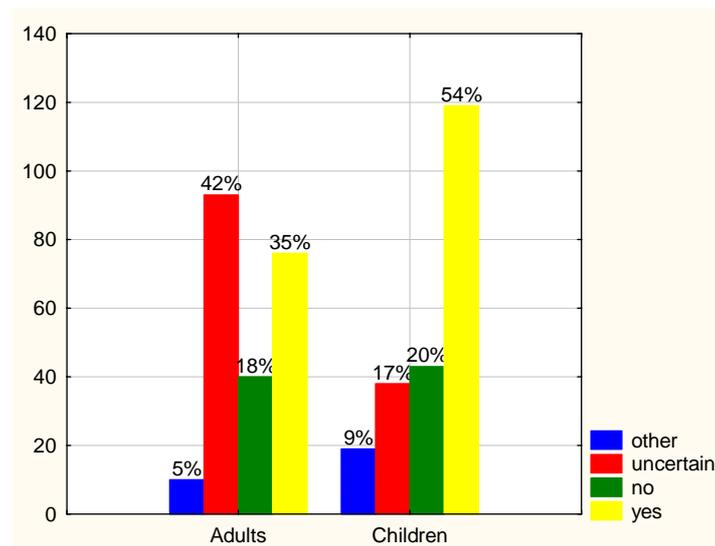
Notes:
Stewart-Maxwell test used in analysis
P<0.01

In contrast with their overwhelming response to their ability to diagnose ADHD (see Question 11), general practitioners seemed to be more cautious with regard to the initiation of medical treatment after a diagnosis is made (see Figure 4.26), probably as a result of not feeling very competent to do so (see Table 4.1, questions 1 and 2). Approximately 30% less than the respondents who answered in the affirmative with regard to whether they should be able to diagnose ADHD (see Figure 4.23) indicated that they should initiate medical treatment. Venter *et al.* (2003:17) found that although general practitioners in the Free State Province of South Africa normally prescribe methylphenidate and have some idea of its action, they were not fully aware of its significant side effects. General practitioners who indicated in the current study that they should not initiate medical treatment (both children and adults 32% respectively) would prefer a psychiatrist (36%) or a paediatrician (36%) to initiate medical treatment with regard to children and a psychiatrist to do this with regard to adults (68%) (see Figure 4.27). According to Venter *et al.* (2004:18), their study revealed that psychiatrists in South Africa are more knowledgeable regarding pharmacology than paediatricians, which is a reflection of their training. This finding

validates the preference of general practitioners in South Africa for referring patients to psychiatrists when they feel uncertain with regard to medical treatment. Venter *et al.* (2003:17) argue that it would be ideal if a specialist could evaluate and initiate medical treatment for individuals with ADHD, but that this was not possible in South Africa due to their limited numbers, especially in the rural areas. Respondents in the Australian study conducted by Shaw *et al.* (2003:132) indicated that general practitioners should not prescribe stimulant medication unless they are adequately trained in the area.

Question 16: Medication as the most effective option for ADHD

Figure 4.28:
Medication as best option
(children and adults)



Notes:
Stewart-Maxwell test used in analysis
 $P < 0.01$

Compared with other studies, it was noteworthy that more than half (54%) of the respondents in the current study indicated that they considered medication as the most effective treatment option in respect of children (see Figure 4.28). This view is probably related to their medical frame of reference, infringing on the space for other approaches. However, the respondents in the current study were significantly more uncertain about medication as the most effective treatment option with regard to adults (42%), while only 35% ($p < 0.01$) replied in the affirmative about the use of medication for adults (see Figure 4.28). This could probably be ascribed to their

perceived lack of knowledge and experience with regard to adults. In contrast to this finding, the research conducted by Lian *et al.* (2003:401) in Singapore found that 85% of the general practitioners indicated that medical treatment alone is not sufficient, demonstrating a greater awareness of the different management strategies for ADHD. The general practitioners who participated in the study by Shaw *et al.* (2003:131-132) warned against overdiagnosis of ADHD resulting in the inappropriate use of medication or in medicine as the only treatment rather than in combination with other psychosocial interventions. They were also concerned about inadequately supervised or uncontrolled use of prescriptive drugs. Shaw *et al.* (2003:134) suggest that further research should be conducted to determine the general practitioners' attitude towards stimulant medication. These researchers hold that if general practitioners are concerned about the use of stimulant medication for ADHD, their concerns should be addressed before they can be expected to prescribe these drugs (Shaw *et al.*, 2003:134). Venter *et al.* (2003:12) addressed this issue in part by exploring the attitudes and knowledge of general practitioners in the Free State province of South Africa with regard to medication (the results were discussed under the previous question).

Question 17: Barriers to the effective management of ADHD

Figure 4.29:
Barriers to effective management (children)

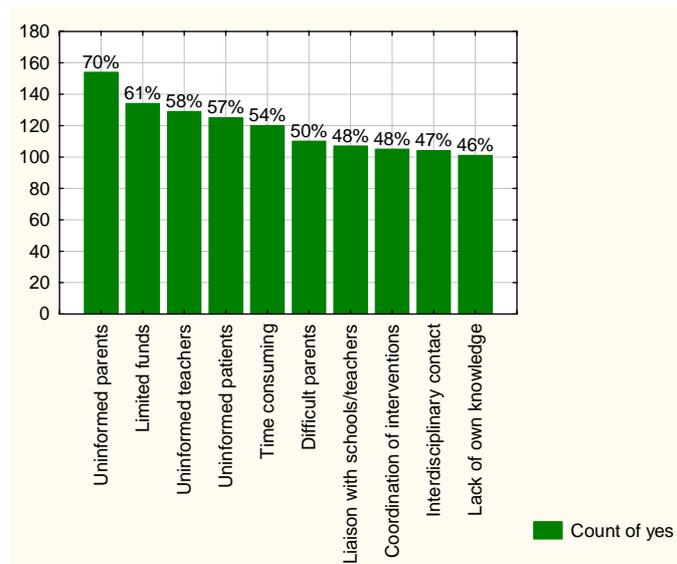
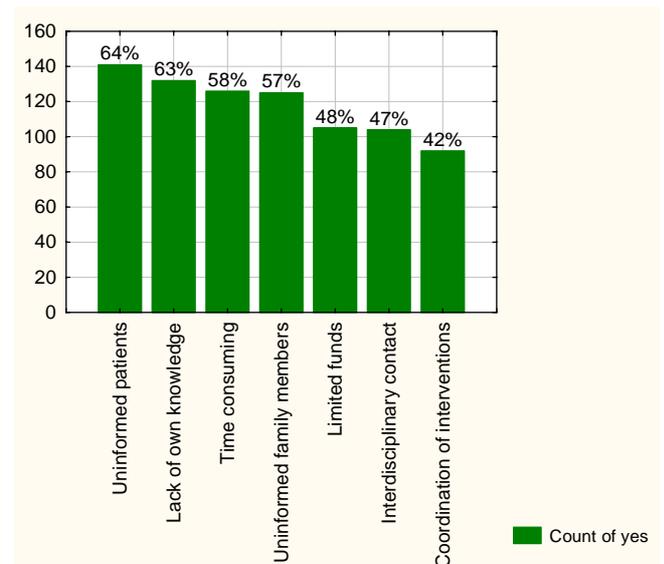


Figure 4.30:
Barriers to effective management (adults)



The general practitioners who participated in the current study identified uninformed parents as the most important barrier to the effective management of patients with

ADHD in respect of children (70%) (see Figure 4.29). More or less half of the respondents considered coordination of interventions, liaison with schools, difficult parents, interdisciplinary contact, lack of own knowledge, uninformed patients and uninformed teachers as equally significant barriers to the effective management of ADHD. A study performed by Kirby *et al.* (2005:125) in Wales revealed that although teachers were better informed than general practitioners with regard to ADHD the knowledge of both groups was still limited. This is confirmed by the study undertaken by Kleynhans (2005:68) in the Western Province of South Africa which found that the teachers' knowledge of ADHD was poor. Limited funds of parents (61%) and time spent with these patients (54%) were significant problem areas. The study conducted by Venter *et al.* (2003:13) revealed that coordinating interventions, liaising with schools and difficult parents were identified by general practitioners in the Free State Province of South Africa as difficulties in the management of ADHD. Psychiatrists and paediatricians in South Africa also reported that coordination of interventions and liaising with schools was difficult, that they experienced problems with difficult parents and that they found consultations time consuming (Venter *et al.*, 2004:18). Time constraints imposed by the demands of private practice is probably the main reason for most of these identified barriers. The time factor seemed to be a problem area identified in most studies (Kwasman *et al.*, 1995:1213; Shaw *et al.*, 2003:132; Venter *et al.*, 2003:16; Venter *et al.*, 2004:18). The barriers identified with regard to adults were more or less the same as those with regard to children, with a few exceptions (see Figure 4.30). It seemed as though limited funds were less of a problem than in the case of children. A lack of the general practitioner's own knowledge about ADHD seemed to be more dominant in respect of adults. This finding is congruent with results obtained in questions 1, 2 and 3 and also consistent with the findings of the New Zealand study by Bushnell *et al.* (2005:632) where general practitioners also identified their own actual or perceived lack of knowledge as an obstacle in the identification of mental disorders. Of particular interest in the present study was that the "Don't know" option was chosen significantly more often with regard to adults across the whole spectrum of barriers presented in this question (see Table 4.3). This could once again reflect a perceived lack of knowledge.

4.3.3 Presentation and exposition of results with regard to *Practices*

Table 4.3: Results per question with regard to children and adults for the component *Practices*

(Key: C = Children A = Adults)

NO.	QUESTION	C/ A	RESPONSES								P-VALUE	EXPOSITION OF RESULTS
			Always		Frequently		Sometimes		Never			
			n	%	n	%	n	%	n	%		
18	Do you refer a patient with suspected ADHD for a psycho-educational/psychological evaluation before commencing treatment?	C	128	59	35	16	41	19	12	6	<0.01	Seventy-five per cent of the GPs indicated that they always or frequently referred a child with suspected ADHD for a psycho-educational evaluation before commencing treatment. This tendency is significantly less in the case of adults (53%). Only 6% indicated that they never required psycho-educational evaluation before commencing treatment while 24% indicated that they did not refer adults for a psychological evaluation before they started treatment.
		A	81	40	26	13	48	23	50	24		
19	How often do you refer a patient with ADHD to a:		Always n %	Often n %	Sometimes n %	Never n %						
19.1	Psychologist	C	77	35	56	26	64	29	21	10	<0.01	Almost two-thirds (61%) of the GPs always or often refer children with ADHD to a psychologist. Only 10% never refer children to a psychologist. With regard to adults they tend to refer patients significantly less often to a psychologist (49%) while 24% indicated that they never referred adults with ADHD to a psychologist. Almost three-quarters (74%) of the GPs sometimes/never refer a child with ADHD to a psychiatrist. While they are significantly more inclined to refer adults to a psychiatrist (44%), 74% of the GPs sometimes/never refer a child to a psychiatrist. A minority of GPs refer children (8%) or adults (10%) with ADHD to a neurologist, while three-quarters of the GPs only sometimes/never refer children (77%) or adults (79%) to a neurologist. More than half (57%) of the GPs sometimes/never refer a child with ADHD to a Paediatrician. They only sometimes refer children (32%) and adults (24%) to a dietician and they are slightly more inclined to refer children to a dietician. Forty-two per cent of the GPs are inclined to always/often seek the services of an occupational therapist while they seldom consider referral to a physiotherapist (8%) or a speech therapist (12%). GPs
		A	58	28	44	21	56	27	50	24		
19.2	Psychiatrist	C	35	16	23	11	100	47	57	27	<0.01	
		A	51	24	43	20	65	31	52	25		
19.3	Neurologist	C	18	8	32	15	86	40	80	37	<0.01	
		A	21	10	24	12	60	29	103	50		
19.4	Paediatrician	C	38	17	56	26	81	37	44	20		
19.5	Dietician	C	11	5	25	12	69	32	111	51	<0.01	
19.4		A	6	3	15	7	49	24	136	66		
19.6	Occupational therapist	C	30	14	61	28	71	33	53	25		
19.7	Physiotherapist	C	1	0	17	8	54	25	144	67		
19.8	Speech therapist	C	4	2	22	10	97	45	92	43		
19.9	Homeopath	C	3	1	4	2	17	8	191	89	0.18	
19.5		A	3	1	4	2	16	8	182	89		
19.10	Support group	C	17	8	39	18	72	33	89	41	<0.01	
19.6		A	13	6	24	12	65	31	106	51		

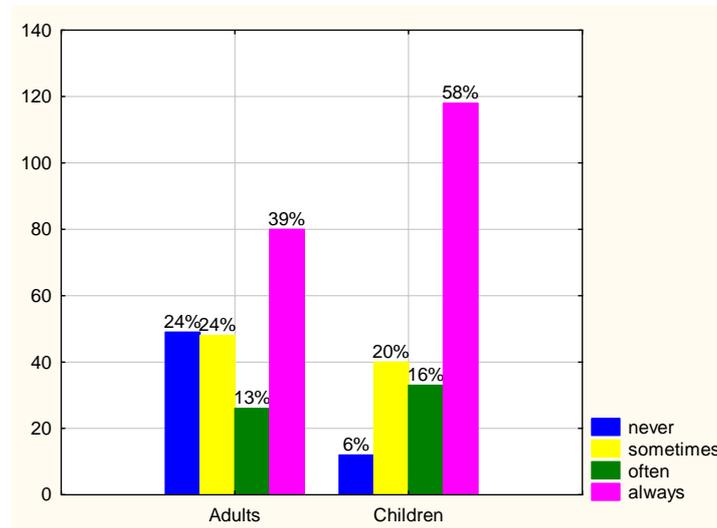
			<i>Always</i>		<i>Often</i>		<i>Sometimes</i>		<i>Never</i>			
			<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>		
												generally prefer not to refer children and adults to a homeopath (89%). Approximately half of them would not consider referral to a support group with regard to both children (41%) and adults (51%) while only 8% (children) and 6% (adults) would always refer to a support group. Significantly fewer GPs would refer children to a support group (Stewart-Maxwell test).
20	How often do you refer a patient with depression to a:											
20.1	Psychologist	C	70	32	86	39	42	19	20	9	0.52	GPs would always/often consider referral of children (71%) and adults (73%) with depression to a psychologist. Slightly fewer are inclined to refer children (56%) and adults (48%) to a psychiatrist. The services of a neurologist, dietician, occupational therapist, physiotherapist, speech therapist and homeopath are seldom sought. Seventy-four per cent of the GPs indicated that they sometimes/never considered referral of children with depression to a paediatrician. More than 80% of the GPs only sometimes/never consider referral of children and adults with depression to a support group.
		A	68	31	92	42	42	19	15	7		
20.2	Psychiatrist	C	43	20	78	36	78	36	20	9	0.07	
		A	37	17	67	31	99	45	15	7		
20.3	Neurologist	C	3	1	16	7	82	38	113	53	0.68	
		A	6	3	13	6	81	38	115	53		
20.4	Paediatrician	C	23	11	33	15	81	37	81	37		
20.5	Dietician	C	3	1	14	6	54	25	145	67	0.04	
20.4		A	3	1	8	4	49	23	154	72		
20.6	Occupational therapist	C	5	2	25	12	72	33	113	53		
20.7	Physiotherapist	C	0	0	6	3	43	20	165	77		
20.8	Speech therapist	C	0	0	11	5	51	24	153	71		
20.9	Homeopath	C	3	1	3	1	14	7	194	91	0.16	
20.5		A	3	1	4	2	16	8	190	89		
20.10	Support group	C	5	2	29	14	73	34	107	50	0.38	
20.6		A	8	4	33	15	68	32	104	49		

NO.	QUESTION	C/A	RESPONSES								P-VALUE	EXPOSITION OF RESULTS
			Always		Often		Sometimes		Never			
			n	%	n	%	n	%	n	%		
21	How often do you refer a patient with Generalised Anxiety Disorder (GAD) to a:											
21.1	Psychologist	C	77	36	80	37	44	20	15	7	0.10	Seventy-three per cent of the GPs indicated that they always/often referred children with GAD to a psychologist while 75% are likely to refer adults with GAD to a psychologist. More or less half of the GPs always/often consider referring children (50%) and adults (49%) with GAD to a psychiatrist. GPs are not inclined to refer patients with GAD to a neurologist, a dietician, an occupational therapist, a physiotherapist, a speech therapist or a homeopath. A quarter of the GPs indicated that they referred children with GAD to a paediatrician. Only 14% per cent of the GPs indicated that they always/often considered referring children with GAD to a support group compared to 23% with regard to adults. Statistical analysis using the Stewart-Maxwell test indicates a significant difference in the referral pattern of the GPs in respect of children and adults. Fifty-seven per cent indicated that they never referred children to a support group compared to 37% with regard to adults. Significantly more adults are sometimes referred
		A	66	31	95	44	42	20	11	5		
21.2	Psychiatrist	C	46	21	63	29	81	38	25	12	<0.01	
		A	35	16	70	33	95	44	14	7		
21.3	Neurologist	C	3	1	17	8	79	37	114	54	0.43	
		A	2	1	11	5	82	39	117	55		
21.4	Paediatrician	C	21	10	35	16	74	35	83	39	<0.01	
21.5 21.4	Dietician	C	2	1	8	4	65	31	138	65		
		A	2	1	4	2	45	21	162	76		
21.6	Occupational therapist	C	4	2	22	10	73	34	113	53		
21.7	Physiotherapist	C	0	0	6	3	34	16	172	81		
21.8	Speech therapist	C	0	0	13	6	55	26	143	68		
21.9 21.5	Homeopath	C	3	1	3	1	13	6	188	91	0.05	
		A	3	1	3	1	17	8	188	89		
21.10 21.6	Support group	C	8	4	22	10	60	29	120	57	<0.01	
		A	8	5	29	18	65	40	61	37		
22	Who refers the patient with ADHD to you?											
22.1	Self	C	27	13	82	38	39	18	65	31	0.39	Half of the GPs indicated that the patient him/herself always/often sought his/her services for the possible identification of ADHD with regard to both children (51%) and adults (51%). According to the responses of the GPs, it seems as though psychologists are significantly more inclined to refer children than adults with ADHD to a GP. Seventy-seven per cent of the GPs indicated that parents always/often referred the patient to the GP while 60% indicated that teachers always/often referred the child with ADHD to the GP. An occupational therapist, a physiotherapist, a speech therapist and a dietician were less inclined to refer children with ADHD to the GP. Analysis revealed that significantly fewer adults are referred to the GP by a social worker. GPs indicated that referrals from other sources were very rare.
		A	31	15	76	36	47	22	55	26		
22.2	Psychologist	C	5	2	78	37	66	31	64	30	<0.01	
		A	10	5	55	26	55	26	93	44		
22.3	Parents Family Members	C	31	14	136	63	42	19	8	4		
		A	7	3	78	37	68	32	59	28		
22.4	Teacher	C	16	7	114	53	63	29	23	11		
22.5	Occupational therapist	C	1	0	37	18	61	29	112	53		
22.6	Physiotherapist	C	1	0	7	3	30	14	171	82		
22.7	Speech therapist	C	2	1	13	6	43	21	151	72		
22.8 22.4	Dietician	C	1	0	7	3	19	9	180	87	0.17	
		A	0	0	2	1	22	11	183	88		
22.9 22.5	Social worker	C	6	3	22	10	68	32	114	54	<0.01	
		A	5	2	10	5	42	20	150	72		
22.10 22.6	Other	C	0	0	12	11	11	10	84	79	0.09	
		A	0	0	7	4	22	13	137	83		

4.3.3.1 Discussion of results per question with regard to *Practices*

Question 18: Referral for psycho-educational/psychological assessment

Figure 4.31:
Referral for assessment (*children and adults*)



Notes:
Stewart-Maxwell test used in analysis
 $P < 0.01$

Three-quarters of the respondents indicated that they always/frequently referred a child with suspected ADHD for a psycho-educational assessment before commencing treatment, which is advisable within a multi-disciplinary approach. It can be indicative of a need to ensure and verify effective diagnosis and management and it can also be a confirmation that they value the role of the psychologist/educational psychologist. This tendency was, however, significantly lower in the case of adults (see Figure 4.31; $p < 0.01$). Psychologists who specialise in adult ADHD are currently fairly limited in South Africa, which could play a role in the general practitioner's inclination not to refer an adult for an assessment.

The three research studies that covered the issue of assessment reported that the majority of medical professionals refer children for psycho-educational assessment before treatment with medication is begun (Kwasman *et al.*, 1995:1213; Venter *et al.*, 2003:16; Venter *et al.*, 2004:14).

Question 19: Referral with regard to ADHD

Figure 4.32:
Referral of children with ADHD

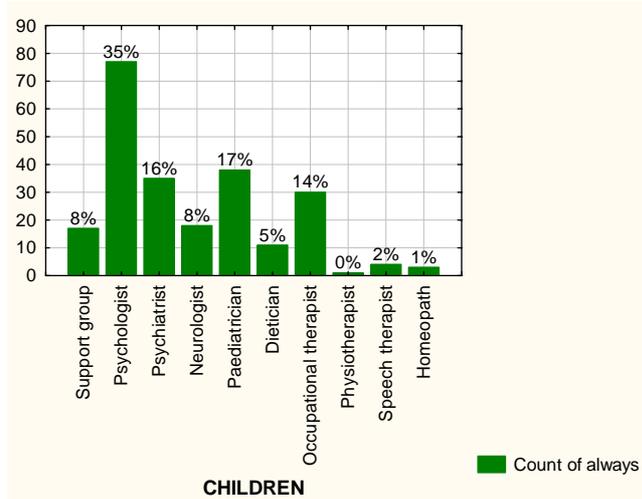
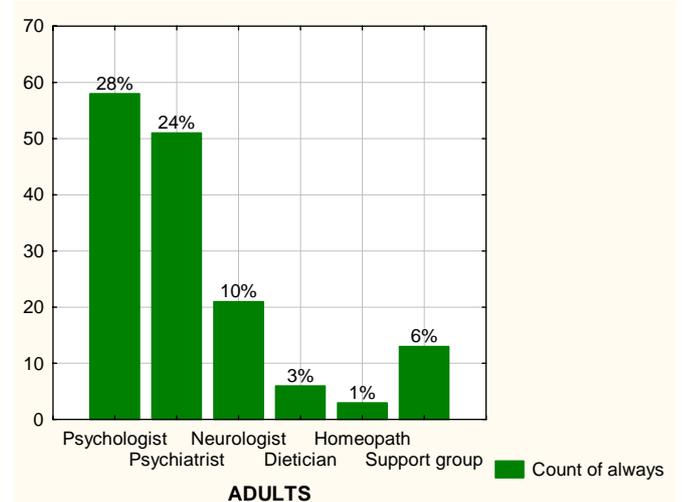


Figure 4.33:
Referral of adults with ADHD



The results of the present study on the referral pattern of general practitioners suggest that general practitioners acknowledge the role of a psychologist in the diagnosis and management of children as 61% of them indicated that they always/often referred children with ADHD to a psychologist (see Table 4.3 and Figure 4.32). This is consistent with the findings of Venter *et al.* (2003:14) if the results of the categories of psychologist and educational therapists on their questionnaire are combined. The respondents were more inclined to refer adults to a psychiatrist, which possibly explains the lower referral rate of adults (as opposed to that of children) to a psychologist (see Figure 4.33). The limited availability of psychologists specialising in the field of adult ADHD can play a determinant role in this regard.

Since research findings show that 30% to 60% of children with ADHD present with speech and language impairments (Baker & Cantwell, 1992; Cohen *et al.*, 2000 in Mash & Wolfe, 2002:107) it is of particular interest to note that only 26% of the general practitioners in this study reported that they always/often refer children with ADHD to a speech therapist.

The results with regard to the referral (always/often) of children with ADHD to paediatricians (43%), neurologists (23%), occupational therapists (42%) and speech

therapists (12%) are generally different from the results reported by Venter *et al.* (2003:14) where the referrals (always/often) were: paediatricians (63.7%), neurologists (79.7%), occupational therapists (88.4%) and speech therapists (34.9%). General practitioners in the current study seldom refer children or adults to dieticians, homeopaths and support groups, which is more or less consistent with the findings of Venter *et al.* (2003:14) with regard to children. Venter *et al.* (2003:16) argue that support groups for parents can play a significant role. These researchers ascribe their finding of a low referral rate to support groups to a lack of such groups in rural areas. However, the present study yielded even lower referral rates to support groups possibly indicating a lack of knowledge among general practitioners on the important role of support groups in a multi-disciplinary approach to managing children and adults with ADHD. The slight change to the available options provided as answers to this question in the current study (the option of educational therapist was replaced by psychiatrist, while the category of social worker was omitted in the present study) does not account for the significant differences that emerged. Although no indication was given in their article on the location (city/rural) of the general practitioners in their study, Venter *et al.* (2003:16) contend that the vast rural areas in the Free State Province of South Africa and the lack of professionals in these areas could account for the referral pattern found in their study. These researchers specifically mentioned the high referral rate to occupational therapists (which is significantly lower in the present study – see Figure 4.32) and assigned it to a greater availability of these professionals in the rural areas as opposed to other professionals who can also assist children with ADHD in the rural areas (Venter, *et al.*, 2003:16). It is thus assumed that the differences between the findings of the present study and the study by Venter *et al.* (2003:16) as far as referral patterns are concerned can probably be ascribed to the significantly higher rate of respondents in the present study who reportedly practise in city areas (64%).

Questions 20 and 21: Referral with regard to depression and GAD

Table 4.4 Comparison of referrals of patients by general practitioners to psychologists and psychiatrists

Professional	Always/Often responses (percentages)					
	ADHD		Depression		GAD	
	Children	Adults	Children	Adults	Children	Adults
Psychologist	61%	49%	71%	73%	73%	75%
Psychiatrist	27%	44%	56%	48%	50%	49%

The referral patterns suggest that general practitioners are more inclined to refer children and adults with depression and anxiety disorders always/often to a psychologist compared to referrals with regard to children and adults with ADHD, and especially with regard to adults (see Tables 4.4 and 4.3). It is presumed that the desirable referral to a psychologist is again an acknowledgement of the important role of the psychologist as part of an interdisciplinary intervention. However, it seems as though general practitioners see the role of the psychologist as less important in the case of adults with ADHD. It is possible that general practitioners are aware of the limited number of psychologists currently practising in the field of adult ADHD in South Africa.

The higher incidence of referrals of children with depression and anxiety disorders (as opposed to ADHD) to a psychiatrist may reflect the reported lower levels of knowledge, confidence and training (Questions 1, 2 and 3) in respect of children. This suggests that ADHD should be addressed in the training of general practitioners in South Africa. Bushnell *et al.* (2005:631) consider general practitioners as "accessible health care providers for most patients with mental disorders and are gatekeepers to specialist care".

There is no difference in the referral pattern of adults with depression and generalised anxiety disorders to a psychiatrist and referrals of adults with ADHD. This result is not congruent with the findings in Questions 1, 2 and 3 with regard to their reported higher levels of knowledge, confidence and training in depression and generalised anxiety disorder as opposed to those in ADHD. In view of these results one would have expected a higher referral rate of adults with ADHD to a psychiatrist and possibly a lower referral rate of adults with depression and anxiety disorders. As

discussed in Section 2.5.2, it is likely that adults with ADHD experience coexisting disorders such as anxiety and depression and it would be difficult to distinguish between ADHD and comorbid conditions (Conners & Jett, 1999:20; Young & Toone, 2000:317). It was suggested by the researcher in Section 2.5.2 that general practitioners should be aware of these disorders so they can make a correct diagnosis or to refer the person to a psychiatrist or psychologist. The reason for the tendency not to refer individuals with ADHD to a psychologist should, however, be further explored (see Section 4.6 for further remarks on this matter).

Assuming that the "specialist" referred to by the Health and Medicine Week in the article in the edition of July 14th is a medical professional, and specifically a psychiatrist, the result discussed above is also not consistent with the findings of Adler (2003:19). In their survey, they found that 65% of the primary care physicians referred the patient to a specialist when diagnosing ADHD in adults. This is significantly higher than in the case of depression (2%) and generalised anxiety disorder (3%).

As in the case of patients with ADHD, general practitioners tend not to refer patients with depression and anxiety disorders to support groups. This confirms the need to explore the matter further so it can be addressed.

Question 22: Referral of patients with ADHD to general practitioners

Figure 4.34:
Referral of children to GPs

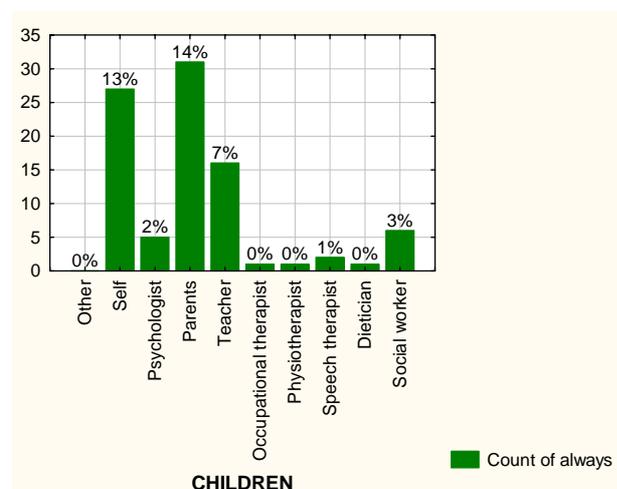
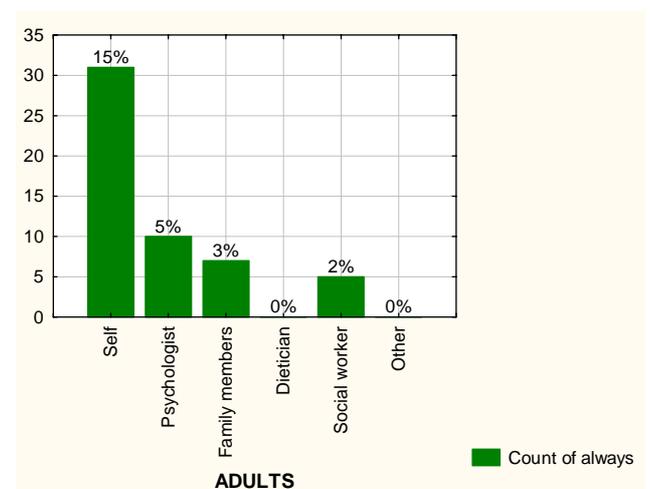
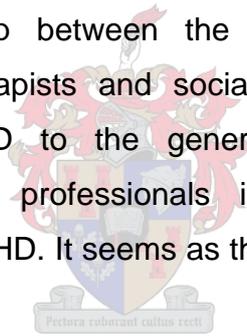


Figure 4.35:
Referral of adults to GPs



As expected, parents are the main referral sources of children with ADHD to general practitioners (see Figure 4.34). Sixty per cent of the general practitioners reported that teachers always/often refer children to them (see Table 4.3, question 22). Although Kleynhans (2005:68) found that teachers in the Western Cape Province of South Africa were poorly informed with regard to ADHD the finding of the present study suggests at least sufficient awareness of ADHD among teachers to enable them to refer a child with suspected ADHD to a general practitioner. The indication by 51% of the general practitioners that the child referred him/herself always/often to the doctor is unexpected and cannot be explained. It is, however, not unexpected that 51% indicated that adults always/often initiated a consultation with their general practitioner (see Table 4.3, question 22). It would be interesting to determine to what extent the adults were familiar with ADHD. It seems as though psychologists were significantly more inclined to refer children than adults with ADHD to general practitioners, and although there is room for improvement, this once again confirms the established interrelationship between the psychologists and the general practitioners. Occupational therapists and social workers also sometimes refer children with suspected ADHD to the general practitioners, confirming the interdisciplinary role of these professionals in the possible diagnosis and management of children with ADHD. It seems as though referrals from other sources were very rare.



4.4 RELIABILITY AND VALIDITY OF THE QUESTIONNAIRE

As mentioned in Section 3.8 it was not the intention of this study to develop a questionnaire that could measure the components of familiarity, attitudes and practices with regard to ADHD. The study aimed at a general *exploration* of these three components and not at measuring them. Thus the response options were not designed to measure these components. This implies that reliability and validity do not come into play in this study. Despite this a reliability and validity analysis was performed by means of the Cronbach alpha test on the components of familiarity and attitudes (the test was not performed on the component of practices as it mainly explored referral practices). As expected, it did not meet the guideline (0.7-1.0) as shown in the following table:

Table 4.5 Cronbach alpha scores for Familiarity and Attitudes with regard to children and adults

(Key: C = Children; A = Adults)

COMPONENT	C A	Score
Familiarity with ADHD	A	0.65
Familiarity with Depression	A	0.54
Familiarity with GAD	A	0.60
Familiarity with ADHD	C	0.59
Familiarity with Depression	C	0.66
Familiarity with GAD	C	0.70
Attitudes	A	0.47
Attitudes	C	0.48

The composition of the questionnaire used in this study was extensively explained in Section 3.6.1. An explanation was also given that the adoption of selected questions from existing questionnaires, especially the questionnaire used by Venter (2003, 2004), which was also used within the South African context, could possibly enhance the reliability of the questionnaire used in the present study (see Section 3.8). The great extent of congruency found between the results of this study and the results reported in Venter (2003, 2004) (items 10, 17, 18, 19, 20 and 21 in the present survey), Adler (items 1, 2, 3, 9, 15, 20 and 21 in the present survey) and also other fairly similar studies (as discussed in Section 4.4) may be seen as confirming the reliability of this questionnaire to some extent.

4.5 DISCUSSION OF THE RESULTS WITH REGARD TO THE TRAINING OF GENERAL PRACTITIONERS IN SOUTH AFRICA

The departments of Family Health and Psychiatry at the relevant universities in the country were contacted to obtain information with regard to their undergraduate training programmes for general practitioners in ADHD, depression and GAD. Numerous efforts were made to contact the relevant persons mainly by telephone but also by means of e-mails. Data were eventually obtained from five universities. These universities are located in three of the provinces of South Africa. The four most represented universities in this study (see Figure 4.2) are among these five. The results obtained can be summarised as follow:

Table 4.6 Undergraduate training programmes in ADHD, depression and GAD

Note: Training offered varies between the third and final years

(Key: C = Children; A = Adults)

UNIVERSITY	C A	CONDITION (Hours)			REMARKS
		ADHD	Depression	GAD	
University A	C A	$\frac{3}{4}$ Mentioned	$\frac{1}{2}$ 5	$\frac{1}{2}$ 5	Exposure to patients during practical work Discussion groups
University B	C A	1 0	1 2	$\frac{1}{2}$ 1	Exposure to patients (children) in 2 weeks practical Exposure to patients (adults) in 8 weeks practical Self study by own choice
University C	C A	$1\frac{1}{2}$ Mentioned	1 4	1 4	Minimal training in psychiatry before 2003 Currently research and seminar based with much more focus on ADHD as well as core psychological problems Since 2003 trained in recognition and etiology of symptoms, and management. Apart from lectures on depression and GAD in adults students have one extensive seminar as well as case presentations on these conditions in adults.
University D	C A	6 weeks lectures + 1 tutorial + 1 case per week	6 weeks lectures + 1 tutorial + 1 case per week	6 weeks lectures + 1 tutorial + 1 case per week	Limited training in psychiatry before 1996, knowledge limited to self study. Last few years considerable attention to ADHD and core knowledge about psychiatric conditions with regard to both children and adults.
University E	C A	$2\frac{3}{4}$ 0	$2\frac{3}{4}$ 15	$1\frac{1}{2}$ 15	The students are also expected to do self study (\pm 6 hours for ADHD and depression and $1\frac{1}{2}$ hours for GAD in children) and they are engaged in practical work for 2 weeks where they see children and adolescents, with a variety of psychiatric conditions under which ADHD, depression and GAD. They are also exposed to adult psychiatric conditions during their practical work.

The above results highlight how limited the training of undergraduate medical students is with regard to ADHD, depression and anxiety disorders in children. In general significantly more attention is dedicated to training in depression and anxiety disorders in respect of adults. Very little attention is paid to adult ADHD, if any. This

corresponds with the results of Question 3 (see Figure 4.11 and Table 4.1) confirming the reported need among general practitioners to be better equipped to diagnose and manage children and adults with ADHD (Question 8; see Figures 4.22 and 4.23). However, it does seem as though there is an increasing awareness at two universities (these universities were not strongly represented in this study) of the need to train general practitioners in respect of psychiatric conditions with specific reference to ADHD. The majority of the general practitioners who participated in this study were trained at the universities where there is still limited awareness of this need.

4.6 SUMMARY AND CONCLUSION

Although the general practitioners who participated in this study indicated that they generally enjoyed treating patients with ADHD and that they considered that they should be able to diagnose ADHD, the main theme that emerged in the findings of this study was that the general practitioners' reported knowledge was limited. They had a significant need to know more about ADHD with regard to children, and to a much greater extent with regard to adults. This finding, which is congruent with the findings of studies abroad, seemed to be related to the respondents' limited undergraduate training with regard to core psychiatric conditions, especially in respect of ADHD, and limited educational opportunities. Although general practitioners did seem to have an awareness of the important role of the psychologist in the diagnosis and effective management of patients with ADHD, their referral practices generally involved only a very limited interdisciplinary approach, probably because of time and financial constraints on overcoming the barriers to coordinating interventions, to liaising with schools and to dealing with difficult parents and uninformed teachers.

There were significant differences between the level of familiarity, attitudes and practices with regard to ADHD in children as opposed to adults at various levels. Apart from the finding that the respondents felt significantly less knowledgeable about and confident of being able to diagnose adult ADHD, probably reflecting their limited or non-existent training in this respect, there was a significant need for educational opportunities that offer insight into and training in adult ADHD. Although they felt equally strongly about being able to diagnose both children and adults with

ADHD, they were significantly more inclined to lean on a psychiatrist for the diagnosis and initiation of medical treatment in the case of adults.

The respondents' familiarity and practices with regard to depression and generalised anxiety disorders, as opposed to ADHD, revealed that they were significantly more knowledgeable about and confident of being able to diagnose and manage these conditions, especially in adults. This reflects the greater emphasis placed on these conditions in their training and possibly the fact that they see a higher number of patients for depression and anxiety disorders. This was also reflected in the referral patterns where general practitioners are significantly less inclined to refer patients, especially adults, with depression and anxiety disorders to other professionals. However, one could question whether the results of this study with regard to adult ADHD were always a true reflection of reality. If the respondents did not have adequate knowledge of adult ADHD, how would they be able to recognise it in their consulting rooms and thus report on it in this questionnaire? It is possible that more adults with ADHD consulted the doctor. Since depression and anxiety disorders coexist with ADHD, however, the general practitioner might not have recognised the ADHD and treated them solely for these comorbid disorders. This could have had an unconscious impact on their responses resulting in some of the high incidences portrayed in the above discussion. This could also have impacted on the referral rates to psychiatrists (see discussions of questions 20 and 21).

The preceding summary addresses the research questions posed in Section 1.3 on the South African general practitioners' familiarity, attitudes and practices with regard to ADHD in children and adults.

In the next and final chapter a summary of this study will be presented followed by the limitations and conclusions drawn from this study. Thereafter recommendations will be made based on these conclusions.

CHAPTER 5

SUMMARY, CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter will provide a summary of this research which will be followed by the possible limitations of this study. Concluding remarks will then be presented before recommendations are made. The chapter concludes with final remarks.

5.2 SUMMARY OF RESEARCH STUDY

Literature and the lay media are increasingly giving attention to ADHD, thus informing the public about this disorder and its symptoms. Recognizing the symptoms in themselves and/or their children, individuals often turn to their family physicians for help. As stated in **Chapter 1** this study aimed at exploring how familiar general practitioners in South Africa are with ADHD with regard to both children and adults and what their attitudes and practices are: whether there are any differences with regard to children as opposed to adults with ADHD and whether there are differences between the general practitioners' familiarity and practices in respect of depression and generalised anxiety disorders as opposed to ADHD. There was a particular concern to determine what the undergraduate training general practitioners are given in ADHD, depression and generalised anxiety disorders in respect of both children and adults.

The study was informed by a literature review in **Chapter 2**, which addressed the different theoretical perspectives with regard to the etiology of ADHD. The discussion of all the aspects covered in this chapter was related to both children and adults. The literature review highlighted the seriousness of ADHD and the significant role the general practitioner plays in the diagnostic and management processes, emphasizing that general practitioners should be well-informed about the disorder in respect of both children and adults. The focus of **Chapter 3** was on the research

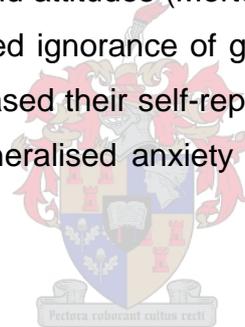
paradigm, the research design and the research methodology. The instruments used in this survey, as well as the instruments from other studies that were incorporated in the questionnaire, were discussed. **Chapter 4** presented and discussed the results of the survey.

5.3 LIMITATIONS OF THIS STUDY

This study's limitations need to be taken into consideration when interpreting the results. Limitations with regard to the method and the sample, as well as the survey instrument, can have an impact on the generalisation of the findings.

5.3.1 Method

As stated in Section 3.5 the validity of a survey can be contaminated by the honesty with which the participants complete the questionnaire, particularly with regard to self-reports of their knowledge and attitudes (Mertens, 2005:167). In Section 4.6, the issue was raised that the reported ignorance of general practitioners with regard to adults with ADHD could have biased their self-report responses in the questionnaire in favour of depression and generalised anxiety disorders resulting in significantly higher scores in these areas.



5.3.2 Response rate

Mouton (2001:153) alleges that a low response rate can cause response bias. The response rate in this study was low, curbing the extrapolation of results. However, the survey yielded some significant values which can be indicative of clear tendencies.

5.3.3 Sample

As mentioned in Section 3.7.1 and Section 4.3 this study was performed on a convenience sample obtained by means of respondents who participated in the web-based survey. Only people who had access to a computer could participate in this study. This could limit the generalisation of results as representative of general practitioners in South Africa.

5.3.4 Questionnaire

As explained in Section 4.4 the purpose of this study was to *explore* the familiarity, attitudes and practices of general practitioners in South Africa with regard to ADHD in children and adults and not to develop a questionnaire that measured them as constructs. This had an effect on the reliability and validity of the questionnaire, and thus on the generalisability of the results.

Despite the above limitations strong tendencies were found in some of the questions counteracting the extent of limited generalisability of the results.

5.4 CONCLUSIONS

The primary purpose of this study was to explore how familiar general practitioners in South Africa are with ADHD and what their attitudes and practices are with regard to both children and adults.

The most significant outcome of this study revealed a considerable need among general practitioners to become better acquainted with ADHD. Although the overwhelming majority considered it their responsibility to diagnose and manage ADHD in both children and adults, they reported low confidence levels about actually doing this, especially with regard to adults. This seems to be related to their reported insufficient training (particularly with regard to adults), their low attendance rate of workshops and lectures, limited educational opportunities and their low reading rate on this topic. It was stated in Section 2.3.2, dealing with the outcome of ADHD, that the problem of misdiagnosis of ADHD in adults can impact on the prevalence of adults with ADHD. The possibility of misdiagnosis was also discussed in Section 4.6 where the responses by uninformed general practitioners on ADHD in adults were questioned, because they probably confused the symptoms of adult ADHD with those of the most common comorbid disorders of depression and generalised anxiety disorders. Owing to their lack of knowledge, they do not recognise ADHD in adults because they do not ask the relevant questions (pertaining to the presence and history of symptoms) to diagnose adult ADHD. This is supported by their expressed significant need for a screening tool. It is thus assumed that they acknowledge the possibility that ADHD can be a lifelong disorder, but that they do not feel equipped to diagnose and manage adult ADHD.

Although the general practitioners felt significantly strong about being able to diagnose ADHD they did not feel equally confident about initiating medical treatment for patients with ADHD. This uncertainty was confirmed by their hesitation with regard to medication as the best treatment option for ADHD. It highlighted a need for more knowledge in respect of medication. It can also indicate an awareness among general practitioners of the current debates on medication as the only effective treatment of ADHD.

Despite their reported need to gain more knowledge so they can diagnose and manage individuals with ADHD more effectively, general practitioners generally demonstrated a positive attitude towards treating patients with ADHD, particularly with regard to children. They did, however, identify barriers that compromise effective management. With regard to children the most important barriers were uninformed parents, reimbursement, uninformed teachers, liaison with schools, coordination of interventions and interdisciplinary contact. The important barriers preventing effective management with regard to adults were uninformed patients, lack of the knowledge on ADHD in adults on the part of the general practitioner, consultation time and uninformed family members. The identification of these barriers highlights the importance of not only increasing the general practitioners' knowledge, as well as that of parents, teachers, patients and family members, of ADHD, but also of enhancing the interdisciplinary processes in order to promote a multi-disciplinary approach to the effective management of ADHD.

Apart from these barriers inhibiting a multi-disciplinary approach to the effective management of individuals with ADHD, this study revealed that there was limited interaction with other role players. While general practitioners valued the role of psychologists/educational psychologists and referred patients for a psychological/psycho-educational assessment (more so with regard to children), there was a low referral rate to support groups with regard to both children and adults. This again emphasises the need to promote a multi-disciplinary approach in the effective management of individuals with ADHD, focusing on the whole person.

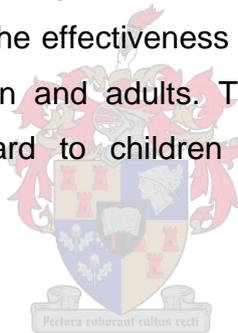
The role of the psychologist, in particular the role of the educational psychologist, needs further consideration in this discussion. As stated in the above paragraph, the general practitioners acknowledged the role of psychologists in their management of

individuals with ADHD by referring them for assessments. It is of particular interest that almost two-thirds (61%) of the general practitioners indicated that they frequently referred children with ADHD to a psychologist. This also emphasises the important role of particularly the educational psychologist in the interdisciplinary intervention of children with ADHD. One would, however, prefer to see an even higher referral rate to psychologists/educational psychologists. For the most effective treatment of children and adults, each partner in the multi-disciplinary team should play an equal role in the collaborative management of individuals with ADHD.

It is quite clear from the outcomes of this study that general practitioners feel knowledgeable and confident in diagnosing and managing depression and generalised anxiety disorders in children and in adults. It would be ideal if the same levels of confidence could be reached with regard to ADHD.

The results of this study revealed the potential of education targeted at the training of general practitioners to improve the effectiveness of the diagnosis and management of ADHD with regard to children and adults. The acquisition of sound baseline knowledge of ADHD with regard to children and adults can lead to fruitful interventions.

5.5 RECOMMENDATIONS



In the light of this study the following recommendations are made:

5.5.1 General practitioners

The important role of general practitioners in the diagnosis and management of ADHD with regard to children and adults was highlighted in Section 1.1. It seems that the first line of action of individuals who learn about ADHD is to turn to their general practitioner (Steinhausen, 2003:321; Searight *et al.*, 2000:2077; Bushnell *et al.*, 2005:631; Harvard Women's Health Watch, 2003:3). Their role as the primary point of consultation and their ability to effectively diagnose and manage ADHD are also addressed in Sections 2.4.2.2 (Steinhausen, 2003:321), Section 2.6.1 (Kewley, 1999:81), Section 2.7.1 (Detweiler *et al.*, 1999:53) and in Section 2.7.2 (Hechtman in Werb, 2005:1). The reported low level of general practitioners' confidence about being able to fulfil this role reveals an urgent need that needs to be addressed.

5.5.1.1 Training

- *Curriculum*

It is strongly recommended that the curricula of undergraduate medical training programmes be adapted to address the significant need for more knowledge about ADHD with regard to children, and particularly with regard to adults. It was indicated in Section 4.5 that two of the universities the researcher contacted had recently developed a greater awareness of this need and had already made adjustments. Venter *et al.* (2003:17) make the same recommendation as a result of their study in the Free State province of South Africa. They argue that if general practitioners in our country are expected to diagnose and manage individuals with ADHD, they must be sufficiently equipped to do so during their training. According to Lian *et al.* (2003:402) more lectures and relevant training will enable better and earlier identification. They also advocate the necessity for adequate baseline knowledge of normal development (2003:397). This will enable general practitioners to make the distinction between expected behaviour and behaviour that is not within the boundaries of normal development.

- *Continued professional development*

To address the need of general practitioners who are already in practice, it is suggested that more educational opportunities be offered to broaden their knowledge base on ADHD. This could be done by focusing on the topic of ADHD in workshops and lectures that provide opportunities for continued professional development.

The findings of this study with regard to the general practitioners' significant lack of knowledge about ADHD, especially with regard to adults, confirmed the statements made by researchers in the literature review as quoted in Section 2.7.2. If general practitioners are not aware of the fact that ADHD can continue into adulthood (cf. Hechtman in Werb, 2005:1) and so they focus on comorbid conditions, not considering underlying ADHD as a diagnosis, it is imperative for continued professional development in this area.

- *Consultation centres for practicing general practitioners*

Training institutions can offer a telephone or e-mail consultation service which practising general practitioners can use to obtain information on ADHD with regard to children and adults. Departments of Psychiatry seem to be best-placed to offer such a service.

5.5.1.2 Screening tools

In view of the important need for screening tools, it is recommended that general practitioners obtain reliable and valid screening tools for both children and adults. This is also suggested by Adler (2003:19), who is currently in the process of developing a screening tool for adults. Screening tools, diagnostic criteria (such as the Wender Utah Criteria) (see Appendix B) and models of assessment (such as the model of Murphy and Gordon presented in Section 2.6.2) should be made available to general practitioners. It was also suggested by Weiss and Murray (2003:717) (see Section 2.6.2) that people who know an individual well, as an adult as well as a child, should also be requested to complete rating scales.

5.5.1.3 Reimbursement

To address the identified barrier of time consuming consultations and poor reimbursements general practitioners could consider the possibility of modified practice arrangements and reimbursement policies. The researcher is not in a position to make more specific suggestions in this regard.

5.5.2 Further research

5.5.2.1 Development of questionnaire

As this study merely explored the components of familiarity, attitudes and practices it is recommended that a follow-up study be conducted to develop a questionnaire that measures the constructs of knowledge, attitudes and practices of general practitioners in South Africa with regard to ADHD. It is also suggested that such a study aim at a more representative sample of general practitioners in South Africa.

5.5.2.2 Continued research on ADHD

It is recommended that more research into the development of ADHD across the lifespan be conducted in South Africa. The literature survey revealed that very few studies had been conducted in South Africa. The following studies are recommended:

- Section 2.6.1 underlines the important role of context. It argues that the most effective diagnosis and appropriate management skills can only be reached if the child (also read adult) is studied within his context of family and environment (Kewley, 1999:87). The social and ethnic environments of people in our country differ from those in other countries. Effective, goal-directed interventions in ADHD must be underpinned by the knowledge of local health and other professionals.
- It became clear from the literature review that the terrain of adults with ADHD is an unexplored field in South Africa. It is recommended that narrative inquiry be undertaken into adults with ADHD. This can provide useful information about their experiences within a South African context.
- As discussed in Section 2.4.2 adults with ADHD, more specifically the hyperactive type in their childhood, tend to engage in assault, disorderly conduct (Barkley, 1998:207), emotional outbursts and reckless behaviour (Resnick, 2000:22). In view of these symptoms an exploration of the role of ADHD in adults as a possible causal factor in child abuse could prove valuable.

Subsequently, an investigation of the possibility of a relationship between ADHD in adults, as a causal factor, and factors such as family violence, crimes, substance abuse, motor car accidents and road rage in our country can yield useful information. Apart from the symptoms mentioned in the previous recommendation, several professionals hold that ADHD in adults can also cause symptoms of reckless and dangerous driving, drug and alcohol abuse, a low frustration level, impatience and verbal abuse (see Section 2.4.2.1).

- According to Asherson and Kooij (2004:14) (see Section 2.7.2) research studies on the effectiveness of psychotherapy for adults are limited. Resnick (2000:97) as well as Weiss and Murray (2003:719) hold that successful management of adult

ADHD entails pharmacological, psychological and environmental interventions to lessen symptoms and to learn coping strategies (see Section 2.7.2). The effectiveness of psychotherapy for adults, as well as the most effective psychotherapy models, should be explored further.

- In view of Asherson's statement (2005:8) mentioned in Section 2.7.2 that research studies on the effects of stimulant medication for adults are much smaller than that for children, a study on medication for adults is recommended.

As mentioned in Chapter 1, ADHD is known to be hereditary, which often implies that one or both parents of a child diagnosed with ADHD can also present with ADHD (Verbeeck, 2003:7). Addressing ADHD in adults (who are often parents) can also impact on the management of ADHD in children and also other psychosocial issues in our communities. It is therefore imperative that further knowledge is gained particularly within the South African context.

5.5.2.3 Knowledge, attitudes and practices of other role players

The importance of a multi-disciplinary approach was advocated in Section 2.7.1 (Rief, 1998:28; Detweiler *et al.*, 1999:54). A research study investigating the experiences of other role players in the multi-disciplinary team could be usefully undertaken to determine their knowledge, attitudes and practices with regard to ADHD in children and adults. These findings could enhance the level of mutual understanding of the different role players and consequently improve interdisciplinary cooperation.

5.5.3 The role of the psychologist/educational psychologist

Educational psychologists in South Africa have the necessary knowledge to evaluate children with ADHD and to take part in devising a management programme for children with ADHD. They are adequately trained to do this and they are also registered with the Professional Board for Psychology of the Health Professions Council of South Africa, ensuring ethical, responsible and professional conduct.

Psychologists and educational psychologists should promote the awareness of their roles as equal partners in the multi-disciplinary team by communicating with general

practitioners on a regular basis. They should create the space for dialogue to occur. Educational psychologists should actively promote awareness amongst general practitioners by inviting them to workshops on ADHD.

Psychologists and educational psychologists should not only have an extensive knowledge of ADHD with regard to children, but also with regard to adults. The educational psychologist inevitably consults with parents when they see children. They should be informed on the role adult ADHD can play in adults' parenting of their children. It is suggested that continuing professional development events for psychologists also focus on adult ADHD.

5.5.4 The role of support groups

Although most of the support groups have their own web sites they should also advertise themselves among their local general practitioners, other professionals, schools and the public by providing them with contact details, flyers and advertisements in local newspapers. In addition, as part of their training, general practitioners should be made aware of the important role of support groups.

5.5.5 Public awareness campaigns

To address the general practitioners' uneasiness about uninformed parents, family members and patients, it is important for the public to be educated by means of the lay media, which could enhance mental health literacy and increase public awareness of ADHD as a presenting disorder in both children and adults.

Several researchers consider patient education for adults as the most successful intervention (see discussion in Section 2.7.2). Patients could gain knowledge by means of articles in magazines and newspapers as well as television programmes. They should be informed about the symptoms so they can recognise them in themselves, about the route to follow to have an appropriate diagnosis made and about the management of ADHD in their lives.

However, care should be taken that inaccurate information is not passed on to the public. The Consortium of International Scientists voiced their concern in an International Consensus Statement (2002) on this issue. They were concerned about

the occasional inaccurate depiction of ADHD conveyed by the media to the public, causing inaccurate referrals, diagnosis and treatment.

5.6 FINAL REMARKS

Although there were limitations with regard to this study it nevertheless yielded useful information that can contribute to a better understanding of the role of the general practitioner in South Africa in the diagnosis and management of ADHD with regard to children and adults. General practitioners need to have sufficient acquaintance with this disorder. Early identification and intervention can temper the impact of unfavourable processes and events involved with ADHD and lessen the risk of crippling psychopathology later in life. The greatest impact on ADHD can be made if all role players, as equal partners, focus on effective evaluation and management of this disorder. Although ADHD is being addressed in our country in many ways, this area is still fallow and should be the focus of more investigation, particularly with regard to adults.

Yes, ADHD can be *"a family splitting, society wrecking, life threatening force"*, but we should never allow hardships in life to defeat us because then we sacrifice our souls.

Charmaine Louw

REFERENCES

- Accardo, P.J. & Blondis, T.A. 2000. Historical Introduction to ADHD. In: Accardo, P.J.; Blondis, T.A.; Whitman, B.Y. & Stein, M.A. (Eds.). *Attention Deficits and Hyperactivity in Children and Adults. Diagnosis. Treatment. Management* (2nd Edition). New York: Marcel Dekker, Inc. 1-11.
- Accardo, P.J.; Blondis, T.A.; Whitman, B.Y. & Stein, M.A. (Eds.). 2000. *Attention Deficits and Hyperactivity in Children and Adults. Diagnosis. Treatment. Management* (2nd Edition). New York: Marcel Dekker.
- Adult ADHD Often Missed. 2003. *Health and Medicine Week*, 14 July:19-20.
- American Psychiatric Association. 2000. *Diagnostic and Statistical Manual of Mental Disorders* (4th Edition). Text Revision. Washington, DC.
- Asherson, P. 2005. Clinical Assessment and Treatment of Attention deficit Hyperactivity Disorder in adults. *Expert Review Neurotherapeutics*, 5(4):1-15.
- Asherson, P.J. & Kooij, J.J.S. 2004. The Clinical Assessment and Treatment of ADHD in Adults. Draft version of unpublished article received by e-mail from author.
- Babbie, E. & Mouton, J. 2001. *The Practice of Social Research*. Cape Town: Oxford University Press Southern Africa.
- Barkley, R.A. 1998. *Attention Deficit Hyperactivity Disorder. A Handbook for Diagnosis and Treatment*. New York: Guilford Press.
- Barkley, R.A. 2000. *Taking Charge of ADHD* (Revised Edition). New York: Guilford Press.
- Barkley, R.A.; Fischer, M.; Smallish, L. & Fletcher, K. 2004. Young Adult Follow-up of Hyperactive Children: Antisocial Activities and Drug Use. *Journal of Child Psychology and Psychiatry*, 45(2):195-211.
- Bless, C.; Higson-Smith, C. & Kagee, A. 2006. *Fundamentals of Social Research Methods. An African Perspective* (4th Edition). Cape Town: Juta & Co. Ltd.

- Bräuer, H.G. 1991. The Incidence of Attention Defecit Hyperactivity Disorder and related factors in a sample of Afrikaans-speaking Sub A (Grade 1) pupils. MA Thesis. Stellenbosch: Stellenbosch University.
- Bushnell, J.; McLeod, D.; Dowell, A.; Salmond, C.; Ramage, S.; Collings, S.; Ellis, P.; Kljakovic, M. & McBain, L. 2005. Do Patients want to disclose psychological problems to GP's? *Family Practice*, 22(6):632-637. Available: <http://fampra.oxfordjournals.org/archive/2005.dtl/cmi076> [Retrieved 2006, 20 June].
- Cambridge Advanced Learner's Dictionary. Available: <http://dictionary.cambridge.org> [Retrieved 2006, 12 June].
- Cipkala-Gaffin, J.A. 1998. Diagnosis and Treatment of Attention-Deficit/Hyperactivity Disorder. *Perspectives in Psychiatric Care*, 34(4):18-25.
- Conners, C.K. & Jett, J.L. 1999. *Attention Deficit Hyperactivity Disorder (in Adults and Children). The Latest Assessment and Treatment Strategies*. Kansas City: Compact Clinicals.
- Consortium of International Scientists. 2002. Consensus Statement on ADHD. *European Child and Adolescent Psychiatry*, 11:96-98.
- Cooper, P. 1999. Making Sense of ADHD. In: Cooper, P. & Bilton, K. (Eds.). *ADHD: Research, Practice and Opinion*. London: Whurr Publishers. 3-13.
- Could it be an attention disorder? 2003. *Harvard Women's Health Watch*, September.
- Coulson, J.; Carr, C.T.; Hutchinson, L. & Eagle, D. (Eds.). 1981. *The Oxford Illustrated Dictionary*. London: Oxford University Press.
- Denzin, N.K. & Lincoln, Y.S. 2005. Introduction. The Discipline and Practice of Qualitative Research. In: Denzin, N.K. & Lincoln, Y.S. (Eds.). *The SAGE Handbook of Qualitative Research* (3rd Edition). Thousand Oaks: SAGE Publications, Inc.
- Detweiler, R.E.; Hicks, A.P. & Hicks, M.R. 1999. A Multi-Modal Approach to the Assessment and Management of ADHD. In: Cooper, P. & Bilton, K. (Eds.). *ADHD: Research, Practice and Opinion*. London: Whurr Publishers. 43-59.

- Dudley-Marling, C. 2004. The Social Construction of Learning Disabilities. *Journal of Learning Disabilities*, 37(6):482-489.
- Durrheim, K. 2006. Research Design. In: Terre Blanche, M.; Durrheim, K. & Painter, D. (Eds.). *Research in Practice* (2nd Edition). Cape Town: UCT Press. 33-59.
- Fischer, M. & Barkley, R. 2006. Yong Adult Outcomes of Children with Hyperactivity: Leisure, Financial and Social Activities. *Journal of Disabilities, Development and Education*, 53(2):229-245.
- General Practitioner: From Wikipedia, The Free Encyclopedia. 2006. Available: http://en.wikipedia.org/wiki/General_practitioner. [Retrieved 2006, 31 March].
- Guba, E.G. & Lincoln, Y.S. 2005. Paradigmatic Controversies, Contradictions, and Emerging Confluences. In: Denzin, N.K. & Lincoln, Y.S. (Eds.). *The SAGE Handbook of Qualitative Research* (3rd Edition). Thousand Oaks: SAGE Publications, Inc.
- Heerwegh, D.; Vanhove, T.; Matthijs, K. & Loosveldt, G. 2005. The Effect of Personalization on Response Rates and Data Quality in Web Surveys. *International Journal of Social Research Methodology*, 8(2):85-99.
- Henning, E. 2004. *Finding your Way in Qualitative Research*. Pretoria: Van Schaik Publishers.
- Hinshaw, S.P. 2000. Introduction. In: Accardo, P.J.; Blondis, T.A.; Whitman, B.Y. & Stein, M.A. (Eds.). *Attention Deficits and Hyperactivity in Children and Adults. Diagnosis. Treatment. Management*. Second Edition. New York: Marcel Dekker, Inc. xiii-xvii.
- Horacek, H.J. 1998. *Brainstorms. Understanding and Treating the Emotional Storms of Attention Deficit Hyperactivity Disorder from Childhood through Adulthood*. New Jersey: Jason Aronson Inc.
- Houghton, S. 2006. Advances in ADHD Research through the Lifespan: Common Themes and Implications. *International Journal of Disability, Development and Education*, 53(2):263-272. Available: <http://journalonline.tandf.co.uk> [Retrieved 2006, 5 March].
- Kewley, G.D. 1999. *Attention Deficit Hyperactivity Disorder. Recognition, Reality and Resolution*. London: David Fulton Publishers.

- Kirby, A.; Davies, R. & Bryant, A. 2005. Do Teachers know more about Specific Learning Difficulties than General Practitioners? *British Journal of Special Education*, 32(3):122-126.
- Kittleson, M.J. 1997. Determining Effective Follow-up of E-Mail Surveys. *American Journal of Health Behavior*, 21(3):193-197.
- Kleynhans, S. 2005. Primary School Teachers' Knowledge and Misperceptions of Attention-Deficit/Hyperactivity Disorder (ADHD). MA Thesis. Stellenbosch: Stellenbosch University.
- Kos, J.M.; Richdale, A.L. & Hay, D.A. 2006. Children with Attention Deficit Hyperactivity Disorder and their Teachers: A Review of the Literature. *International Journal of Disability, Development and Education*, 53(2):147-160. Available: <http://journalonline.tandf.co.uk> [Retrieved 2006, 5 March].
- Kwasman, A.; Tinsley, B.J. & Lepper, H.S. 1995. Pediatricians' Knowledge and Attitudes Concerning Diagnosis and Treatment of Attention Deficit and Hyperactivity Disorders. *Archives of Pediatric and Adolescent Medicine*, 149:1211-1216.
- Ladnier, R.D. & Massanari, A.E. 2000. Treating ADHD as Attachment Deficit Disorder. In: Levy, T.M. (Ed.). *Handbook of Attachment Interventions*. California: Academic Press. 27-65.
- Levy, F.; Hay, D.A. & Bennett, K.S. 2006. Genetics of Attention Deficit Hyperactivity Disorder: A Current Review and Future Prospects. *International Journal of Disability, Development and Education*. 53(1), 5-20. Available: <http://journalonline.tandf.co.uk> [Retrieved 2006, 5 March].
- Lian, W.B.; Ho, S.K.Y.; Yeo, C.L. & Ho, L. 2003. General Practitioner's Knowledge on Childhood Developmental and Behavioural Disorders. *Singapore Medical Journal*, 44(8):397-403.
- Martelas, A. 2004. Lecture: ADHD in Adulthood. University of Stellenbosch.
- Martin, N.C.; Levy, F.; Pieka, J. & Hay, D.A. 2006. A Genetic Study of Attention Deficit Hyperactivity Disorder, Conduct Disorder, Oppositional Defiant Disorder and Reading Disability: Aetiological Overlaps and Implications.

- International Journal of Disability, Development and Education*, 53(1):21-34.
Available: <http://journalsonline.tandf.co.uk> [Retrieved 2006, 5 March].
- Mash, E.J. & Wolfe, D.A. 2002. *Abnormal Child Psychology* (2nd Edition). Belmont: Wadsworth.
- McCormick, L.C. 2004. Adult Outcome of Child and Adolescent Attention Deficit Hyperactivity Disorder in a Primary Care Setting. *Southern Medical Journal*, 97(9):823-826.
- McGough, J.J. & Barkley, R.A. 2004. Diagnostic Controversies in Adult Attention Deficit Hyperactivity Disorder. *The American Journal of Psychiatry*, 161:1948-1956.
- McMillan, J.H. & Schumacher, S. 2006. *Research in Education. Evidence-Based Inquiry*. Boston: Pearson Education, Inc.
- MED-pages, 2006. Products & Services. Available: <http://www.medpages.co.za/products.php> [Retrieved 2006, 20 April].
- Mertens, D.M. 2005. *Research and Evaluation in Education and Psychology. Integrating Diversity with Quantitative, Qualitative, and Mixed Methods* (2nd Edition). London: SAGE Publications.
- Meyer, A. 1998. Attention Deficit/Hyperactivity Disorder among North Sotho Speaking Primary School Children in South Africa: Prevalence and Sex Ratios. *Journal of Psychology in Africa*, 8(2):186-195.
- Meyer, A.; Eilertsen, D-E.; Sundet, J.M.; Tshifularo, J. & Sagvolden, T. 2004. Cross-cultural Similarities in ADHD-like Behaviour amongst South African Primary School Children. *South African Journal of Psychology*, 34(1):122-138.
- Mouton, J. 2003. *How to succeed in your Master's and Doctoral Studies* (4th Impression). Pretoria: Van Schaik Publishers.
- Murphy, K.R. & Gordon, M. 1998. Assessment of Adults with ADHD. In: Barkley, R.A. *Attention Deficit Hyperactivity Disorder. A Handbook for Diagnosis and Treatment*. New York: Guilford Press. 345-369.
- Neuman, W.L. 2000. *Social Research Methods. Qualitative and Quantitative Approaches*. Boston: Allyn & Bacon Publishers.

- New South Wales. 2003. Criteria for the Diagnosis and Management of Attention Deficit Hyperactivity Disorder in Adults. Document TG190/3. NSW Health: Pharmaceutical Services Branch.
- Olivier, M.A.J. & Steenkamp, D.S. 2004. Attention-Deficit/Hyperactivity Disorder: Underlying Deficits in Achievement Motivation. *International Journal for the Advancement of Counseling*, 26(1):47-63. Available: <http://springlink.metapress.com> [Retrieved 2006, 14 June].
- Oppenheim, A.N. 1996. *Questionnaire Design, Interviewing and Attitude Measurement*. London: Pinter Publishers Ltd.
- Plug, C.; Louw, D.A.; Gouws, L.A. & Meyer, W.F. 1997. *Verklarende en Vertalende Sielkundewoordeboek* (3^{de} Uitgawe). Johannesburg: Heinemann Voortgesette Onderwys (Edms) Bpk.
- Rafalovich, A. 2001. Psychodynamic and Neurological Perspectives on ADHD: Exploring Strategies for Defining a Phenomenon. *Journal for the Theory of Social Behaviour*, 31(4):397-418.
- Resnick, R.J. 2000. *The Hidden Disorder. A Clinician's Guide to Attention Deficit Hyperactivity Disorder in Adults*. Washington DC: American Psychological Association.
- Rief, S. 1998. *The ADD/ADHD Checklist*. New Jersey: Prentice Hall.
- Rosca-Rebaudengo, P.; Durst, R. & Dickman, M. 2000. Adult Attention Deficit Hyperactivity Disorder and Comorbidity. *International Journal of Psychiatry in Clinical Practice*, 4:35-39.
- Rucklidge, J.J. 2006. Gender Differences in Neuropsychological Functioning of New Zealand Adolescents with and without Attention Deficit Hyperactivity Disorder. *International Journal of Disability, Development and Education*, 53(1):47-66. Available: <http://journalonline.tandf.co.uk> [Retrieved 2006, 5 March].
- Schwartz, M.A. 2001. Adult ADHD: Advances in understanding treatment. Paper presented at the 14th Annual US Psychiatric and Mental Health Congress. November, Boston.

- Searight, H.R.; Burke, J.M. & Rottnek, F. 2000. Adult ADHD: Evaluation and Treatment in Family Medicine. *American Family Physician*, 62(9):2077-2086, 2091-2092.
- Shaw, K.; Wagner, I.; Eastwood, H. & Mitchell, G. 2003. A Qualitative Study of Australian GP's Attitudes and Practices in the Diagnosis and Management of Attention-Deficit/Hyperactivity Disorder (ADHD). *Family Practice*, 20(2):129-134. Available: <http://fampra.oxfordjournals.org/cgi/reprint/20/2/129> [Retrieved 2006, 20 June].
- Sinclair, J. (Ed.). 1991. *Collins Cobuild English Language Dictionary*. London: HarperCollins Publishers.
- Steinhausen, H-C. (ed). 2003. Attention-Deficit Hyperactivity Disorder in a Life Perspective. *Acta Psychiatrica Scandinavica*, 107:321-322.
- Sutcliffe, P. 2006. Comorbid Attentional Factors and Frequency Discrimination Performance in a Child with Reading Difficulties. *International Journal of Disability, Development and Education*. 53(2):195-208. Available: <http://journalonline.tandf.co.uk> [Retrieved 2006, 5 March].
- Tait, G. 2005. The ADHD debate and the Philosophy of Truth. *International Journal of Inclusive Education*, 9(1):17-38.
- Taylor, J.F. 2004. ADHASA International Conference. 17 August - 7 September.
- Terre Blanche, M.; Durrheim, K. & Painter, D. (Eds.). 2006. *Research in Practice* (2nd Edition). Cape Town: UCT Press.
- Thomas, R.M. 2003. *Blending Qualitative and Quantitative Research Methods in Theses and Dissertations*. California: Corwin Press, Inc.
- Toner, M.; O'Donoghue, T. & Houghton, S. 2006. Living in Chaos and Striving for Control: How Adults with Attention Deficit Hyperactivity Disorder deal with their Disorder. *International Journal of Disability, Development and Education*, 53(2):247-261.
- Tredoux, C. & Smith, M. 2006. Evaluating Research Design. In: Terre Blanche, M.; Durrheim, K. & Painter, D. (Eds.). *Research in Practice* (2nd Edition). Cape Town: UCT Press. 160-186.

- Venter, A. 2004. Lecture: ADHD in Children. Somerset House College. Somerset West.
- Venter, A.; Joubert, G. & Van der Linde, G.P. 2003. Knowledge, Attitudes and Practices of General Practitioners regarding the Management of Attention Deficit and Hyperactivity Disorder. *South African Family Practice*, 45(5):12-17. Available: <http://www.ajol.info/viewarticle.php?id=6530> [Retrieved 2006, 21 June].
- Venter, A.; Van der Linde, G.; Du Plessis, J. & Joubert, G. 2004. A Comparison between South African Psychiatrists' and Pediatricians' Knowledge, Attitudes and current Practices regarding the Management of Children with Attention Deficit/Hyperactivity Disorder. *Journal of Child and Adolescent Mental Health*, 16(1):11-18. Available: <http://www.ajol.info/viewarticle.php?id=16342> [2005, 20 September].
- Verbeeck, W.J.C. 2003. Attention Deficit Hyperactivity Disorder in Adults: Diagnostic Imperatives. *South African Psychiatry Review*, 6:7-10.
- Weiss, G. & Hechtman L.T. 1993. *Hyperactive Children Grown Up. ADHD in Children, Adolescents and Adults* (2nd Edition). New York: The Guilford Press.
- Weiss, M. & Murray, C. 2003. Assessment and Management of Attention-Deficit Hyperactivity Disorder in Adults. *Canadian Medical Association Journal*, 168(6):715-722.
- Werb, J. 2005. Adult ADHD – Pay attention to the Signs and stop the needless Suffering. *National Review of Medicine*, 2(11):1-2.
- Young, S. & Toone, B. 2000. Attention Deficit Hyperactivity Disorder in Adults: Clinical Issues. A Report from the first NHS Clinic in the UK. *Counselling Psychology Quarterly*, 13(3):313-319.

DSM-IV TR CRITERIA FOR ATTENTION-DEFICIT/HYPERACTIVITY DISORDER

A. Either (1) or (2):

- (1) six (or more) of the following symptoms of **inattention** have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Inattention

- (a) often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
- (b) often has difficulties sustaining attention in tasks or play activities
- (c) often does not seem to listen when spoken to directly
- (d) often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behaviour or failure to understand instructions)
- (e) often has difficulty organizing tasks and activities
- (f) often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
- (g) often loses things necessary for tasks or activities (e.g. toys, school assignments, pencils, books, or tools)
- (h) is often easily distracted by extraneous stimuli
- (i) is often forgetful in daily activities

- (2) six (or more) of the following symptoms of **hyperactivity-impulsivity** have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Hyperactivity

- (a) often fidgets with hands or feet or squirms in seat
- (b) often leaves seat in classroom or in other situations in which remaining seated is expected
- (c) often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)
- (d) often has difficulty playing or engaging in leisure activities quietly
- (e) is often "on the go" or often acts as if "driven by a motor"
- (f) often talks excessively

Impulsivity

- (g) often blurts out answers before questions have been completed
 - (h) often has difficulty awaiting turn
 - (i) often interrupts or intrudes on others (e.g. butts into conversations or games)
- B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before age 7 years
- C. Some impairment from the symptoms is present in two or more settings (e.g. at school [or work] and at home)
- D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning
- E. The symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (e.g. Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder)

(American Psychiatric Association, 2000:92-93)



UTAH CRITERIA FOR ADHD IN ADULTS

PART I. CHILD CHARACTERISTICS

A childhood history consistent with ADHD in childhood as defined by A or B.

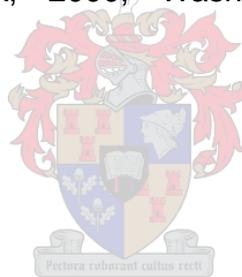
- A. *Narrow criteria:* The individual met DSM-III-R criteria for ADHD in childhood (8 of the 13 symptoms or signs).
- B. *Broad criteria:* Both characteristics 1 and 2, and one characteristic from 3-6.
1. Hyperactivity. More active than other children, unable to sit still, fidgety, restless, always on the go, talking excessively.
 2. Attention deficits, sometimes described as a “short attention span”, distractibility, daydreaming, failure to finish assignments in class or complete homework, was called lazy, was said not to remember, was told could do better than did. Underachievement not due to primarily learning disorders (dyslexia) or to deficits in intelligence.
 3. Behaviour problems in school. Talking in class, disciplined more than classmates, called out for disrupting the class, stayed after school. Disciplined by teachers, principal.
 4. Impulsivity. Could not wait for turn, acted without thinking, blurted things out, got into accidents, reckless.
 5. Overexcitability or temper outbursts, got into many fights.
 6. Temper outbursts.

PART II. ADULT CHARACTERISTICS

- A. The presence in adulthood of (1) motor activity and (2) attention deficits, together with at least two of characteristics 3-7.
1. Persistent motor hyperactivity.
 2. Attention deficits, impaired concentration, distractibility.
 3. Affective lability.
 4. Hot temper: explosive, short-lived outbursts, transient loss of control, easily provoked or constant irritability, impatience.
 5. Disorganization and inability to complete tasks.
 6. Stress intolerance.
 7. Impulsivity.
- B. Absence of the following symptoms:
1. Bipolar and depressive mood disorders.
 2. Schizophrenia, schizoaffective disorder, schizotypal personality disorder; the woolly (vague, meandering) thinking (speech) of schizophrenic spectrum disorder.

3. Borderline personality disorder:
 - a. A pattern of unstable and intense interpersonal relationships, characterized by alternating between extremes of overidealization and devaluation.
 - b. Recurrent suicide threats, gestures, or behaviour, or any self-mutilating behaviour.
 - c. Prominent identity disturbances.
 - d. Pronounced and chronic feelings of emptiness.
 - e. Frantic efforts to avoid real or imagined abandonment and intolerance of being alone.
4. Antisocial personality disorder, alcohol or drug abuse within the past year, or any history of stimulant drug abuse.

From *Attention-Deficit-Hyperactivity Disorders in Adults* (pp. 241-243) by PH Wender, 1995, New York: Oxford University Press and from *ADHD in Adulthood: A Guide to Current Theory, Diagnosis, and Treatment* (pp. 15-17) by M Weiss, LT Hechtman & G Weiss, 1999, Baltimore: John Hopkins University Press in *The Hidden Disorder. A Clinician's Guide to Attention Deficit Hyperactivity Disorder in Adults* (p.55) by RJ Resnick, 2000, Washington: American Psychological Association.



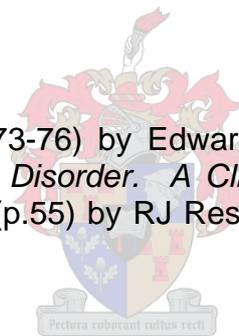
HALLOWELL AND RATEY'S DIAGNOSTIC CRITERIA FOR ADD IN ADULTS

- A. Chronic disturbance in which at least 15 of the following are present:
1. a sense of underachievement, of not meeting one's goals (regardless of how much one has actually accomplished)
 2. difficulty in getting organized
 3. chronic procrastination or trouble getting started
 4. many projects going simultaneously; trouble with follow-through
 5. tendency to say what comes to mind without necessarily considering the timing or appropriateness of the remark
 6. a frequent search for high stimulation
 7. an intolerance of boredom
 8. easy distractibility, trouble focusing attention, tendency to tune out or drift away in the middle of a page or a conversation, often coupled with an ability to hyperfocus at times
 9. often creative, intuitive, highly intelligent
 10. trouble in going through established channels, following "proper" procedure
 11. impatient; low tolerance for frustration
 12. impulsive, either verbally or in action, as in impulsive spending of money, changing plans, enacting new schemes or career plans, and the like
 13. tendency to worry needlessly, endlessly; tendency to scan the horizon looking for something to worry about, alternating with inattention to or disregard for actual dangers
 14. sense of insecurity
 15. mood swings, mood lability, especially when disengaged from a person or a project (These mood swings are not as those associated with manic-depressive illness or depression)
 16. restlessness (Not the full-blown hyperactivity usually seen in a child, but more like "nervous energy": pacing, drumming fingers, shifting position while sitting, leaving a table or room frequently, feeling edgy while at rest)
 17. tendency toward addictive behaviour (The addiction may be to a substance such as alcohol or cocaine, or to an activity, such as gambling, shopping, eating, or overwork)
 18. chronic problems with self-esteem

19. inaccurate self-observation
 20. family history of ADD or manic-depressive illness or depression or substance abuse or other disorders of impulse control or mood
- B. Childhood history of ADD (It may have been formally diagnosed, but in reviewing the history, the signs and symptoms are there)
- C. Situation not explained by other medical or psychiatric condition

Note: Consider a criterion met only if the behaviour is considerably more frequent than that of most people of the same mental age.

From *Driven to Distraction* (pp.73-76) by Edward M Hallowell and John J Ratey, Pantheon Books in *The Hidden Disorder. A Clinician's Guide to Attention Deficit Hyperactivity Disorder in Adults* (p.55) by RJ Resnick, 2000, Washington: American Psychological Association.



ASSESSMENT OF ADULT PATIENT'S DEVELOPMENTAL HISTORY

Prenatal

- Did your mother use drugs, nicotine or alcohol when she was pregnant with you?
- Do you know of there was difficulty during pregnancy or childbirth such as diabetes, eclampsia, cord around the neck, breech delivery or lack of oxygen?

Childhood

- Were you described as a very active or impulsive child?
- Did your parents complain that you were difficult?
- Did you have any accidents requiring hospital treatment as a child?
- Were you exposed to any physical, verbal or emotional abuse? Were you neglected?
- Did you have any serious trauma, exposure to violence or losses as a child?
- Did you have any medical illnesses as a child?
- Did you ever lose consciousness?

School

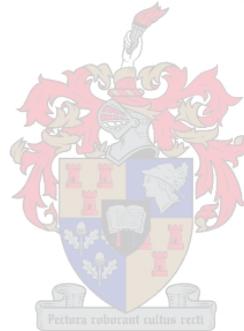
- How did you do academically in elementary school? In high school?
- Were you ever enrolled in college or university? Did you drop out? Why?
- Did you ever fail a grade?
- Did you ever have psychological testing or were told you had a learning disability?
- Did you receive learning assistance or were you ever placed in a special class?
- Were you ever suspended or expelled from school?
- Did you have any special problems with reading? Arithmetic? Writing?
- Did teachers complain that you were not achieving your potential or were trying your best?
- Was your performance at school variable or unpredictable?

Family psychiatric history

Have your parents, siblings or children had any of the following problems:

- ADHD
- Depression
- Anxiety (worrying, fears, extreme embarrassment in front of people, repetitive behaviours that do not make sense)
- Psychosis (hearing voices, seeing things, or having fixed, wrong ideas)
- Tics (involuntary and repetitive movements or sounds)
- Substance abuse or alcoholism
- Learning Disability
- Behaviour problems or problems with the law
- Suicide attempt or self-destructive behaviour

From: Assessment and Management of Attention-Deficit Hyperactivity Disorder in Adults by Margaret Weiss and Candice Murray. *Canadian Medical Association Journal*, 168(6):718



ASSESSMENT MEASURES

CHILDREN	ADULTS
STRUCTURED INTERVIEWS	
<ul style="list-style-type: none"> • NIMH Diagnostic Interview Schedule for Children (DISC) • Diagnostic Interview for Children and Adolescents (DICA) • Schedule for Affective Disorders and Schizophrenia for School-Age Children (Kiddie-SADS) 	
STRUCTURED OBSERVATIONS	
<ul style="list-style-type: none"> • Child Behaviour Checklist – Direct Observation Form (CBCL-DOF) 	
BEHAVIOUR RATING SCALES	
Parent Ratings	
<ul style="list-style-type: none"> • Conners Parent Rating Scale – Revised (CPRS-R) • Child Behaviour Checklist (CBCL) • ADHD Rating Scales • Home situations Questionnaire – Revised (HSQ-R) • Comprehensive Behaviour Rating Scale for Children • Devereux Behaviour Rating Scale • Child Attention Profile • SNAP Rating Scale • Brown Attention Deficit Disorder Questionnaire • Home/School Situations Questionnaire 	
Teacher Ratings	
<ul style="list-style-type: none"> • Conners Teachers Rating Scale – Revised (CTRS-R) • Child Behaviour Checklist – Teacher Report Form (CBCL-TRF) • ADD-H Comprehensive Teacher’s Rating Scale (ACTeRs) 	

<ul style="list-style-type: none"> Behaviour Assessment System for Children – Teacher Rating Scales (BASC-TRS) 	
Self Ratings	
<ul style="list-style-type: none"> Child Behaviour Checklist – youth Self Report (CBCL-YSR) Conners/Wells Adolescent Self-Report of Symptoms (CASS) 	<ul style="list-style-type: none"> Wender Utah Rating Scale (WURS) Conners Adult Attention-Deficit Rating Scale (CAARS) Copeland Symptom Checklist for Adult ADHD Internal Restlessness Scale Adult ADHD Self-Report Scale (ASRS) Wender-Reimherr Adult Attention Deficit Disorder Scale (WRAADDSS)
NEUROPSYCHOLOGICAL TESTS	
<ul style="list-style-type: none"> Continuous Performance Test (CPT) Freedom from Distractibility (FD) factor on WISC-III: Subtests Arithmetic, Digit Span, Coding Matching Familiar Figures Test (MFFT) Stroop Word-Color Association Test Wisconsin Card Sort Test Test of Working Memory 	<ul style="list-style-type: none"> Continuous Performance Test (CPT) Freedom from Distractibility (FD) factor on WAIS. Letter Cancellation Test
FAMILY FUNCTIONING TESTS	
<ul style="list-style-type: none"> Family Environment Scale Family Assessment Device Parenting Stress Index 	
OBJECTIVE PERSONALITY MEASURES	
	<p>MMPI</p> <p>MCMII</p>

Conners & Jett (1999:34-35,85-89), Martelas (2004), Young & Toone, (2000:317); Simpson & Plosker (2004:216)



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19 Maart 2006

Beste Dokter

NAVORSINGSPROJEK: BEKENDHEID MET AANDAGAFLEIBAARHEID- HIPERAKTIWITEITSVERSTEURING (AAHV)

Studies het aangetoon dat huisdokters moontlik nie bemagtig voel om Aandagafleibaarheid-Hiperaktiwiteitsversteuring (AAHV) te diagnoseer en te behandel nie. My navorsingsprojek is daarop gerig om vas te stel of dit wel die geval is ten opsigte van huisdokters in Suid-Afrika.

U ondervinding en mening sal vir my baie waardevol wees. U ondersteuning deur die aangehegte vraelys (in beide Afrikaans en Engels beskikbaar) elektronies te voltooi en aan my terug te stuur, sal my werklik help om vas te stel wat die scenario is onder Suid-Afrikaanse huisdokters. Die vraelys is kort en behoort u nie langer as 10 minute te neem om te voltooi nie.

U kan verseker wees dat al die inligting as hoogs vertroulik en anoniem hanteer sal word. Die verspreiding van die vraelys word deur MEDpages hanteer om aan hierdie kriteria te voldoen. Beantwoord asseblief al die vrae. U dui u antwoord aan deur slegs in die betrokke merkblokkie te kliek. U verkry toegang tot die vraelys deur op die volgende adres te kliek: <http://www.ee.sun.ac.za/ADHD/index.php> Om sekuriteitsredes is 'n gebruikersnaam en wagwoord ingebou, wat **adhd** is vir beide.

Indien u enige navrae het oor die resultate van die studie is u baie welkom om my te kontak by cll@sun.ac.za of by tel. 021/808 2319

Dankie vir u tyd en moeite.

Die uwe

Charmaine Louw
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19 March 2006

Dear Doctor

RESEARCH PROJECT: FAMILIARITY WITH ATTENTION-DEFICIT HYPERACTIVITY DISORDER (ADHD)

Studies indicated that general practitioners tend to feel unequipped to diagnose or treat ADHD. My research project is aimed at establishing whether this is true for the general practitioners of South Africa.

Your experiences and opinion will be of immense value to me. Your support in completing the attached questionnaire (available in Afrikaans and English) electronically and sending it back to me, will truly aid to establish the scenario for South African general practitioners. The questionnaire is short and should not take you more than 10 minutes to complete.

You can be assured that all information will be treated as highly confidential and anonymous. The distribution of the questionnaire is handled by MEDpages to ensure adherence to these criteria. Please answer all questions. Merely enter your answer by clicking in the appropriate check box. You can gain access to the questionnaire on the website by clicking on the following address:
<http://www.ee.sun.ac.za/ADHD/index.php>. For security purposes a username and password is required, which is **adhd** for both.

Should you have any queries with regard to the results of this study, you are welcome to contact me at cl1@sun.ac.za or tel. 021/808 2319.

Thanking you for your time and trouble.

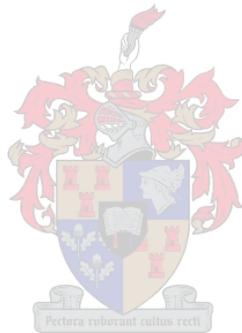
Yours sincerely

Charmaine Louw
Department of Educational Psychology
University of Stellenbosch





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**QUESTIONNAIRE WITH REGARD TO TRAINING OF GP'S IN ADHD
VRAELYS T.O.V. OPLEIDING VAN GP'S IN AAHV**

University Universiteit	
Lecturer involved with regard to training in psychiatry Dosent betrokke by die opleiding in psigiatrie	
Contact details of this person Kontakbesonderhede van hierdie persoon	

1. Do your students receive training in psychiatry? Word u studente opgelei in psigiatrie?		YES / NO JA / NEE				
If your answer is YES, please answer the following questions: Indien u antwoord JA is, antwoord asseblief die volgende vrae:						
		NUMBER OF HOURS / AANTAL URE				
	Year level(s) Jaarvlak(ke)					
		<table border="1"> <tr> <td>Lectures Lesings</td> <td>Self study Selfstudie</td> <td>Praktical Prakties</td> <td>Other: Ander:</td> </tr> </table>	Lectures Lesings	Self study Selfstudie	Praktical Prakties	Other: Ander:
Lectures Lesings	Self study Selfstudie	Praktical Prakties	Other: Ander:			
PSYCHIATRY PSIGIATRIE	Children Kinders					
	Adults Volwassenes					

2. Is it possible to differentiate between the following psychiatric conditions with regard to training? Is dit moontlik om tussen die volgende psigiatriese toestande te differensieer t.o.v. opleiding?						
		NUMBER OF HOURS / AANTAL URE				
	Year level(s) Jaarvlak(ke)					
		<table border="1"> <tr> <td>Lectures Lesings</td> <td>Self study Selfstudie</td> <td>Praktical Prakties</td> <td>Other: Ander:</td> </tr> </table>	Lectures Lesings	Self study Selfstudie	Praktical Prakties	Other: Ander:
Lectures Lesings	Self study Selfstudie	Praktical Prakties	Other: Ander:			
DEPRESSION DEPRESSIE	Children Kinders					
	Adults Volwassenes					
ANXIETY DISORDERS ANGSVER- STEURINGS	Children Kinders					
	Adults Volwassenes					
ADHD AAHV	Children Kinders					
	Adults Volwassenes					

AAHV Navorsingsprojek

English

Vraelys

Dekbrief

Welkom by die AAHV Navorsingsprojek se webblad

Baie dankie vir u bereidwilligheid om aan die projek deel te neem.

Volg die **English**-skakel om na die Engelse weergawe van die webblad te gaan.

Die dekbrief wat u per E-pos ontvang het, is op die webblad beskikbaar. Volg die **Dekbrief**-skakel.

Volg asseblief die **Vraelys**-skakel en voltooi die vraelys deur op die relevante keuses te klik.

Laaste opdatering: 5/4/06



AAHV Vraelys

AAHV Hoofblad

AAHV Navorsingsprojek: Vraelys

DEMOGRAFIESE DATA

Ouderdom	<input type="text"/>
Geslag	<input type="radio"/> Manlik <input type="radio"/> Vroulik
Aan watter universiteit het u u mediese opleiding ontvang?	<input type="text"/>
Aantal jare in praktyk	<input type="text"/>
Waar is u praktyk?	<input type="radio"/> Stad <input type="radio"/> Platteland
In watter provinsie is u praktyk?	<input type="text"/>
Aard van praktyk	<input type="radio"/> Privaat <input type="radio"/> Deeltyds Privaat <input type="radio"/> Hospitaalgebaseerd <input type="radio"/> Akademies <input type="radio"/> Gemeng
Hoeveel kliënte met AAHV sien u gemiddeld per jaar?	Kinders <input type="text"/> Volwassenes <input type="text"/>

1. Hoeveel kennis dra u van die volgende:

		T.O.V. KINDERS				T.O.V. VOLWASSENES			
1.1	AAHV	<input type="radio"/> Baie	<input type="radio"/> Gemiddeld	<input type="radio"/> Beperk	<input type="radio"/> Glad nie	<input type="radio"/> Baie	<input type="radio"/> Gemiddeld	<input type="radio"/> Beperk	<input type="radio"/> Glad nie
1.2	Depressie	<input type="radio"/> Baie	<input type="radio"/> Gemiddeld	<input type="radio"/> Beperk	<input type="radio"/> Glad nie	<input type="radio"/> Baie	<input type="radio"/> Gemiddeld	<input type="radio"/> Beperk	<input type="radio"/> Glad nie
1.3	Algemene Angsversteurings	<input type="radio"/> Baie	<input type="radio"/> Gemiddeld	<input type="radio"/> Beperk	<input type="radio"/> Glad nie	<input type="radio"/> Baie	<input type="radio"/> Gemiddeld	<input type="radio"/> Beperk	<input type="radio"/> Glad nie

2. Met hoeveel selfvertroue kan u die volgende diagnoseer:									
		T.O.V. KINDERS				T.O.V. VOLWASSENES			
2.1	AAHV	<input type="radio"/> Baie	<input type="radio"/> Gemiddeld	<input type="radio"/> Beperk	<input type="radio"/> Geen	<input type="radio"/> Baie	<input type="radio"/> Gemiddeld	<input type="radio"/> Beperk	<input type="radio"/> Geen
2.2	Depressie	<input type="radio"/> Baie	<input type="radio"/> Gemiddeld	<input type="radio"/> Beperk	<input type="radio"/> Geen	<input type="radio"/> Baie	<input type="radio"/> Gemiddeld	<input type="radio"/> Beperk	<input type="radio"/> Geen
2.3	Algemene Angsversteurings	<input type="radio"/> Baie	<input type="radio"/> Gemiddeld	<input type="radio"/> Beperk	<input type="radio"/> Geen	<input type="radio"/> Baie	<input type="radio"/> Gemiddeld	<input type="radio"/> Beperk	<input type="radio"/> Geen

3. Het u aanvanklike opleiding u voldoende voorberei vir die praktyk ten opsigte van die volgende:							
		T.O.V. KINDERS			T.O.V. VOLWASSENES		
3.1	AAHV	<input type="radio"/> Grootliks	<input type="radio"/> Redelik	<input type="radio"/> Glad nie	<input type="radio"/> Grootliks	<input type="radio"/> Redelik	<input type="radio"/> Glad nie
3.2	Depressie	<input type="radio"/> Grootliks	<input type="radio"/> Redelik	<input type="radio"/> Glad nie	<input type="radio"/> Grootliks	<input type="radio"/> Redelik	<input type="radio"/> Glad nie
3.3	Algemene Angsversteurings	<input type="radio"/> Grootliks	<input type="radio"/> Redelik	<input type="radio"/> Glad nie	<input type="radio"/> Grootliks	<input type="radio"/> Redelik	<input type="radio"/> Glad nie

4. Hoe bekom u kennis ten opsigte van die volgende (meer as een opsie kan gemerk word):						
		T.O.V. KINDERS				
4.1	AAHV	<input type="checkbox"/> Werkswinkels	<input type="checkbox"/> Lesings	<input type="checkbox"/> Selfstudie	<input type="checkbox"/> Konsultasie	<input type="checkbox"/> Ander <input type="text"/>
4.2	Depressie	<input type="checkbox"/> Werkswinkels	<input type="checkbox"/> Lesings	<input type="checkbox"/> Selfstudie	<input type="checkbox"/> Konsultasie	<input type="checkbox"/> Ander <input type="text"/>
4.3	Algemene Angsversteurings	<input type="checkbox"/> Werkswinkels	<input type="checkbox"/> Lesings	<input type="checkbox"/> Selfstudie	<input type="checkbox"/> Konsultasie	<input type="checkbox"/> Ander <input type="text"/>
		T.O.V. VOLWASSENES				
4.1	AAHV	<input type="checkbox"/> Werkswinkels	<input type="checkbox"/> Lesings	<input type="checkbox"/> Selfstudie	<input type="checkbox"/> Konsultasie	<input type="checkbox"/> Ander <input type="text"/>
4.2	Depressie	<input type="checkbox"/> Werkswinkels	<input type="checkbox"/> Lesings	<input type="checkbox"/> Selfstudie	<input type="checkbox"/> Konsultasie	<input type="checkbox"/> Ander <input type="text"/>
4.3	Algemene Angsversteurings	<input type="checkbox"/> Werkswinkels	<input type="checkbox"/> Lesings	<input type="checkbox"/> Selfstudie	<input type="checkbox"/> Konsultasie	<input type="checkbox"/> Ander <input type="text"/>

5.	Hoeveel artikels/referate het u ge lees met betrekking tot AAHV?									
	T.O.V. KINDERS					T.O.V. VOLWASSENES				
	<input type="radio"/> 0	<input type="radio"/> 1-2	<input type="radio"/> 3-4	<input type="radio"/> 5-6	<input type="radio"/> 7+	<input type="radio"/> 0	<input type="radio"/> 1-2	<input type="radio"/> 3-4	<input type="radio"/> 5-6	<input type="radio"/> 7+

6.	Hoeveel werkwinkels/lesings het u bygewoon ten opsigte van AAHV?							
	T.O.V. KINDERS				T.O.V. VOLWASSENES			
	<input type="radio"/> 0	<input type="radio"/> 1-2	<input type="radio"/> 3-4	<input type="radio"/> 5+	<input type="radio"/> 0	<input type="radio"/> 1-2	<input type="radio"/> 3-4	<input type="radio"/> 5+

7.	Hoe dikwels konsulteer u met ander professionele persone t.o.v. AAHV?									
	T.O.V. KINDERS					T.O.V. VOLWASSENES				
	<input type="radio"/> Weeliks	<input type="radio"/> Maandeliks	<input type="radio"/> Halfjaarliks	<input type="radio"/> Jaarliks	<input type="radio"/> Nooit	<input type="radio"/> Weeliks	<input type="radio"/> Maandeliks	<input type="radio"/> Halfjaarliks	<input type="radio"/> Jaarliks	<input type="radio"/> Nooit

8.	Het u 'n behoefte om meer te weet van AAHV?					
	T.O.V. KINDERS			T.O.V. VOLWASSENES		
	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Onseker	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Onseker

9.	Het u 'n behoefte aan 'n gebruikersvriendelike kontrolelys om AAHV te diagnoseer?					
	T.O.V. KINDERS			T.O.V. VOLWASSENES		
	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Onseker	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Onseker

10.	Hoe voel u daaroor om pasiënte met AAHV te behandel?					
	T.O.V. KINDERS			T.O.V. VOLWASSENES		
	<input type="radio"/> Geniet dit	<input type="radio"/> Gee nie om nie	<input type="radio"/> Hou nie daarvan nie	<input type="radio"/> Geniet dit	<input type="radio"/> Gee nie om nie	<input type="radio"/> Hou nie daarvan nie

11.	Behoort huisdokters in staat te kan wees om AAHV te diagnoseer?					
	T.O.V. KINDERS			T.O.V. VOLWASSENES		
	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Onseker	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Onseker

12.	Indien u respons 'NEE' was by vraag 11, wie dink u behoort dit te doen?				
	T.O.V. KINDERS				
	<input type="radio"/> Psigiater	<input type="radio"/> Sielkundige	<input type="radio"/> Pediater	<input type="radio"/> Neuroloog	<input type="radio"/> Ander <input type="text"/>
	T.O.V. VOLWASSENES				
	<input type="radio"/> Psigiater	<input type="radio"/> Sielkundige	<input type="radio"/> Neuroloog	<input type="radio"/> Ander <input type="text"/>	

13.	Behoort huisdokters medisynebehandeling vir AAHV pasiënte te inisieer?					
	T.O.V. KINDERS			T.O.V. VOLWASSENES		
	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Onseker	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Onseker

14.	Indien u respons 'NEE' was by vraag 13, wie dink u behoort dit te doen?				
	T.O.V. KINDERS				
	<input type="radio"/> Psigiater	<input type="radio"/> Sielkundige	<input type="radio"/> Pediater	<input type="radio"/> Neuroloog	<input type="radio"/> Ander <input type="text"/>
	T.O.V. VOLWASSENES				
	<input type="radio"/> Psigiater	<input type="radio"/> Sielkundige	<input type="radio"/> Neuroloog	<input type="radio"/> Ander <input type="text"/>	

15.	Is daar genoeg opleidingsgeleenthede vir huisdokters t.o.v. AAHV?					
	T.O.V. KINDERS			T.O.V. VOLWASSENES		
	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Onseker	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Onseker

16.	Beskou u medikasie as die mees effektiewe behandelingsmetode vir AAHV?							
	T.O.V. KINDERS				T.O.V. VOLWASSENES			
	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Onseker	<input type="radio"/> Ander <input type="text"/>	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Onseker	<input type="radio"/> Ander <input type="text"/>

17. Wat beskou u as hindernisse in die doeltreffende behandeling van pasiënte met AAHV?		T.O.V. KINDERS			
17.1	Koördinasie van intervensies	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Soms	<input type="radio"/> Weet nie
17.2	Skakeling met skole/onderwysers	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Soms	<input type="radio"/> Weet nie
17.3	Moeilike ouers	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Soms	<input type="radio"/> Weet nie
17.4	Oningeligte ouers	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Soms	<input type="radio"/> Weet nie
17.5	Oningeligte pasiënte	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Soms	<input type="radio"/> Weet nie
17.6	Oningeligte onderwysers	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Soms	<input type="radio"/> Weet nie
17.7	Tydrowend	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Soms	<input type="radio"/> Weet nie
17.8	Interdissiplinêre kontak	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Soms	<input type="radio"/> Weet nie
17.9	Gebrekkige eie kennis re AAHV	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Soms	<input type="radio"/> Weet nie
17.10	Ouers se beperkte fondse	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Soms	<input type="radio"/> Weet nie
		T.O.V. VOLWASSENES			
17.1	Koördinasie van intervensies	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Soms	<input type="radio"/> Weet nie
17.2	Oningeligte ouers	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Soms	<input type="radio"/> Weet nie
17.3	Oningeligte gesinslede	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Soms	<input type="radio"/> Weet nie
17.4	Tydrowend	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Soms	<input type="radio"/> Weet nie
17.5	Interdissiplinêre kontak	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Soms	<input type="radio"/> Weet nie
17.6	Gebrekkige eie kennis re AAHV	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Soms	<input type="radio"/> Weet nie
17.7	Beperkte fondse	<input type="radio"/> Ja	<input type="radio"/> Nee	<input type="radio"/> Soms	<input type="radio"/> Weet nie

18.	Verwys u 'n pasiënt met verdagte AAHV vir 'n opvoedkundig-sielkundige/sielkundige evaluering voordat u met behandeling begin?							
	T.O.V. KINDERS				T.O.V. VOLWASSENES			
	<input type="radio"/> Altyd	<input type="radio"/> Gereeld	<input type="radio"/> Soms	<input type="radio"/> Noot	<input type="radio"/> Altyd	<input type="radio"/> Gereeld	<input type="radio"/> Soms	<input type="radio"/> Noot

19.	Hoe dikwels verwys u 'n pasiënt met AAHV na 'n:								
	T.O.V. KINDERS								
19.1	Sielkundige	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Noot				
19.2	Psigiater	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Noot				
19.3	Neuroloog	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Noot				
19.4	Pediater	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Noot				
19.5	Dieetkundige	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Noot				
19.6	Arbeidsterapeut	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Noot				
19.7	Fisioterapeut	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Noot				
19.8	Spraakterapeut	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Noot				
19.9	Homeopaat	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Noot				
19.10	Ondersteuningsgroep	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Noot				
	T.O.V. VOLWASSENES								
19.1	Sielkundige	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Noot				
19.2	Psigiater	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Noot				
19.3	Neuroloog	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Noot				
19.4	Dieetkundige	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Noot				
19.5	Homeopaat	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Noot				
19.6	Ondersteuningsgroep	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Noot				

20. Hoe dikwels verwys u 'n pasiënt met Depressie na 'n		T.O.V. KINDERS			
20.1	Sielkundige	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
20.2	Psigiater	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
20.3	Neuroloog	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
20.4	Pediater	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
20.5	Dieetkundige	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
20.6	Arbeidsterapeut	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
20.7	Fisioterapeut	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
20.8	Spraakterapeut	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
20.9	Homeopaat	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
20.10	Ondersteuningsgroep	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
		T.O.V. VOLWASSENES			
20.1	Sielkundige	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
20.2	Psigiater	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
20.3	Neuroloog	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
20.4	Dieetkundige	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
20.5	Homeopaat	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
20.6	Ondersteuningsgroep	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit

21. Hoe dikwels verwys u 'n pasiënt met Algemene Angsversteurings na 'n:		T.O.V. KINDERS			
21.1	Sielkundige	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
21.2	Psigiater	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
21.3	Neuroloog	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
21.4	Pediater	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
21.5	Dieetkundige	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
21.6	Arbeidsterapeut	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
21.7	Fisioterapeut	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
21.8	Spraakterapeut	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
21.9	Homeopaat	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
21.10	Ondersteuningsgroep	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
		T.O.V. VOLWASSENES			
21.1	Sielkundige	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
21.2	Psigiater	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
21.3	Neuroloog	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
21.4	Dieetkundige	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
21.5	Homeopaat	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
21.6	Ondersteuningsgroep	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit

22. Wie verwys die pasiënt met AAHV na u?		T.O.V. KINDERS			
22.1	Self	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
22.2	Sielkundige	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
22.3	Ouers	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
22.4	Onderwyser	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
22.5	Arbeidsterapeut	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
22.6	Fisioterapeut	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
22.7	Spraakterapeut	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
22.8	Dieetkundige	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
22.9	Maatskaplike werker	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
22.10	Ander: <input type="text"/>	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
		T.O.V. VOLWASSENES			
22.1	Self	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
22.2	Sielkundige	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
22.3	Familielede	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
22.4	Dieetkundige	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
22.5	Maatskaplike werker	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit
22.6	Ander:	<input type="radio"/> Altyd	<input type="radio"/> Dikwels	<input type="radio"/> Soms	<input type="radio"/> Nooit

ADHD Research Project

[Afrikaans](#)

[Questionnaire](#)

[Cover letter](#)

Welcome to the ADHD Research Project web page

Thank you very much for your willingness to participate in this research project.

Follow the **Afrikaans** link to go to the Afrikaans version of the web page.

The cover letter that you have received by E-mail is available on this web page. Follow the **Cover letter** link.

Please follow the **Questionnaire** link and complete the questionnaire by clicking on the appropriate choices.

Last update: 29/3/06



ADHD Questionnaire

ADHD Main Page

ADHD Research Project: Questionnaire

DEMOGRAPHIC DATA	
Age	<input type="text"/>
Gender	<input type="radio"/> Male <input type="radio"/> Female
At which university did you receive your medical training?	<input type="text"/>
Number of years in practice	<input type="text"/>
Where is your practice?	<input type="radio"/> City <input type="radio"/> Rural areas
In which province is your practice?	<input type="text"/>
Nature of practice	<input type="radio"/> Private <input type="radio"/> Part time private <input type="radio"/> Hospital based <input type="radio"/> Academic <input type="radio"/> Mixed
On average, how many clients with ADHD do you see per year?	Children <input type="text"/> Adults <input type="text"/>

1. How knowledgeable are you with regard to the following:		WITH REGARD TO CHILDREN				WITH REGARD TO ADULTS			
1.1	ADHD	<input type="radio"/> Very	<input type="radio"/> Average	<input type="radio"/> Limited	<input type="radio"/> Not at all	<input type="radio"/> Very	<input type="radio"/> Average	<input type="radio"/> Limited	<input type="radio"/> Not at all
1.2	Depression	<input type="radio"/> Very	<input type="radio"/> Average	<input type="radio"/> Limited	<input type="radio"/> Not at all	<input type="radio"/> Very	<input type="radio"/> Average	<input type="radio"/> Limited	<input type="radio"/> Not at all
1.3	Generalized Anxiety Disorders	<input type="radio"/> Very	<input type="radio"/> Average	<input type="radio"/> Limited	<input type="radio"/> Not at all	<input type="radio"/> Very	<input type="radio"/> Average	<input type="radio"/> Limited	<input type="radio"/> Not at all

2. How confident are you in diagnosing the following:		WITH REGARD TO CHILDREN				WITH REGARD TO ADULTS			
2.1	ADHD	<input type="radio"/> Very	<input type="radio"/> Average	<input type="radio"/> Limited	<input type="radio"/> Not at all	<input type="radio"/> Very	<input type="radio"/> Average	<input type="radio"/> Limited	<input type="radio"/> Not at all
2.2	Depression	<input type="radio"/> Very	<input type="radio"/> Average	<input type="radio"/> Limited	<input type="radio"/> Not at all	<input type="radio"/> Very	<input type="radio"/> Average	<input type="radio"/> Limited	<input type="radio"/> Not at all
2.3	Generalized Anxiety Disorders	<input type="radio"/> Very	<input type="radio"/> Average	<input type="radio"/> Limited	<input type="radio"/> Not at all	<input type="radio"/> Very	<input type="radio"/> Average	<input type="radio"/> Limited	<input type="radio"/> Not at all

3. Did your initial training prepare you adequately for your practice with regard to the following:		WITH REGARD TO CHILDREN			WITH REGARD TO ADULTS		
3.1	ADHD	<input type="radio"/> Greatly	<input type="radio"/> Average	<input type="radio"/> Not at all	<input type="radio"/> Greatly	<input type="radio"/> Average	<input type="radio"/> Not at all
3.2	Depression	<input type="radio"/> Greatly	<input type="radio"/> Average	<input type="radio"/> Not at all	<input type="radio"/> Greatly	<input type="radio"/> Average	<input type="radio"/> Not at all
3.3	Generalized Anxiety Disorders	<input type="radio"/> Greatly	<input type="radio"/> Average	<input type="radio"/> Not at all	<input type="radio"/> Greatly	<input type="radio"/> Average	<input type="radio"/> Not at all

4. How do you obtain more knowledge with regard to (more than one option may be marked):		WITH REGARD TO CHILDREN				
4.1	ADHD	<input type="checkbox"/> Workshops	<input type="checkbox"/> Lectures	<input type="checkbox"/> Self study	<input type="checkbox"/> Consultation	<input type="checkbox"/> Other <input type="text"/>
4.2	Depression	<input type="checkbox"/> Workshops	<input type="checkbox"/> Lectures	<input type="checkbox"/> Self study	<input type="checkbox"/> Consultation	<input type="checkbox"/> Other <input type="text"/>
4.3	Generalized Anxiety Disorders	<input type="checkbox"/> Workshops	<input type="checkbox"/> Lectures	<input type="checkbox"/> Self study	<input type="checkbox"/> Consultation	<input type="checkbox"/> Other <input type="text"/>
		WITH REGARD TO ADULTS				
4.1	ADHD	<input type="checkbox"/> Workshops	<input type="checkbox"/> Lectures	<input type="checkbox"/> Self study	<input type="checkbox"/> Consultation	<input type="checkbox"/> Other <input type="text"/>
4.2	Depression	<input type="checkbox"/> Workshops	<input type="checkbox"/> Lectures	<input type="checkbox"/> Self study	<input type="checkbox"/> Consultation	<input type="checkbox"/> Other <input type="text"/>
4.3	Generalized Anxiety Disorders	<input type="checkbox"/> Workshops	<input type="checkbox"/> Lectures	<input type="checkbox"/> Self study	<input type="checkbox"/> Consultation	<input type="checkbox"/> Other <input type="text"/>

5. **How many articles/papers have you read on ADHD?**

WITH REGARD TO CHILDREN					WITH REGARD TO ADULTS				
<input type="radio"/> 0	<input type="radio"/> 1-2	<input type="radio"/> 3-4	<input type="radio"/> 5-6	<input type="radio"/> 7+	<input type="radio"/> 0	<input type="radio"/> 1-2	<input type="radio"/> 3-4	<input type="radio"/> 5-6	<input type="radio"/> 7+

6. **How many workshops/lectures have you attended on ADHD?**

WITH REGARD TO CHILDREN				WITH REGARD TO ADULTS			
<input type="radio"/> 0	<input type="radio"/> 1-2	<input type="radio"/> 3-4	<input type="radio"/> 5+	<input type="radio"/> 0	<input type="radio"/> 1-2	<input type="radio"/> 3-4	<input type="radio"/> 5+

7. **How often do you consult with other professionals on ADHD?**

WITH REGARD TO CHILDREN					WITH REGARD TO ADULTS				
<input type="radio"/> Weekly	<input type="radio"/> Monthly	<input type="radio"/> Semi-annually	<input type="radio"/> Annually	<input type="radio"/> Never	<input type="radio"/> Weekly	<input type="radio"/> Monthly	<input type="radio"/> Semi-annually	<input type="radio"/> Annually	<input type="radio"/> Never

8. **Do you have a need to know more about ADHD?**

WITH REGARD TO CHILDREN			WITH REGARD TO ADULTS		
<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Uncertain	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Uncertain

9. **Do you have a need for an easy-to-use checklist to diagnose ADHD?**

WITH REGARD TO CHILDREN			WITH REGARD TO ADULTS		
<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Uncertain	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Uncertain

10. **How do you feel about treating patients with ADHD?**

WITH REGARD TO CHILDREN			WITH REGARD TO ADULTS		
<input type="radio"/> Enjoy	<input type="radio"/> Do not mind	<input type="radio"/> Dislike	<input type="radio"/> Enjoy	<input type="radio"/> Do not mind	<input type="radio"/> Dislike

11. **Should general practitioners be able to diagnose ADHD?**

WITH REGARD TO CHILDREN			WITH REGARD TO ADULTS		
<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Uncertain	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Uncertain

12.	If your response to question 11 was 'NO', who do you think should do it?				
	WITH REGARD TO CHILDREN				
	<input type="radio"/> Psychiatrist	<input type="radio"/> Psychologist	<input type="radio"/> Pediatrician	<input type="radio"/> Neurologist	<input type="radio"/> Other <input type="text"/>
	WITH REGARD TO ADULTS				
	<input type="radio"/> Psychiatrist	<input type="radio"/> Psychologist	<input type="radio"/>	<input type="radio"/> Neurologist	<input type="radio"/> Other <input type="text"/>

13.	Should general practitioners initiate medical treatment for patients with ADHD?					
	WITH REGARD TO CHILDREN			WITH REGARD TO ADULTS		
	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Uncertain	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Uncertain

14.	If your response to question 13 was 'NO', who do you think should do it?				
	WITH REGARD TO CHILDREN				
	<input type="radio"/> Psychiatrist	<input type="radio"/> Psychologist	<input type="radio"/> Pediatrician	<input type="radio"/> Neurologist	<input type="radio"/> Other <input type="text"/>
	WITH REGARD TO ADULTS				
	<input type="radio"/> Psychiatrist	<input type="radio"/> Psychologist	<input type="radio"/>	<input type="radio"/> Neurologist	<input type="radio"/> Other <input type="text"/>

15.	Are there sufficient educational opportunities for general practitioners with regard to ADHD?					
	WITH REGARD TO CHILDREN			WITH REGARD TO ADULTS		
	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Uncertain	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Uncertain

16.	Do you consider medication as the most effective treatment option for ADHD?									
	WITH REGARD TO CHILDREN					WITH REGARD TO ADULTS				
	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Uncertain	<input type="radio"/> Other	<input type="text"/>	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Uncertain	<input type="radio"/> Other	<input type="text"/>

17.	What do you consider as barriers in the effective management of patients with ADHD?				
	WITH REGARD TO CHILDREN				
17.1	Coordination of interventions	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Don't know
17.2	Liaison with schools/teachers	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Don't know
17.3	Difficult parents	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Don't know
17.4	Uninformed parents	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Don't know
17.5	Uninformed patients	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Don't know
17.6	Uninformed teachers	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Don't know
17.7	Time consuming	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Don't know
17.8	Interdisciplinary contact	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Don't know
17.9	Lack of own knowledge re ADHD	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Don't know
17.10	Parents' limited funds	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Don't know
	WITH REGARD TO ADULTS				
17.1	Coordination of interventions	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Don't know
17.2	Uninformed family members	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Don't know
17.3	Uninformed patients	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Don't know
17.4	Time consuming	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Don't know
17.5	Interdisciplinary contact	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Don't know
17.6	Lack of own knowledge re ADHD	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Don't know
17.7	Limited funds	<input type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> Sometimes	<input type="radio"/> Don't know

18.	Do you refer a patient with suspected ADHD for a psycho-educational/psychological evaluation before commencing treatment?							
	WITH REGARD TO CHILDREN				WITH REGARD TO ADULTS			
	<input type="radio"/> Always	<input type="radio"/> Frequently	<input type="radio"/> Sometimes	<input type="radio"/> Never	<input type="radio"/> Always	<input type="radio"/> Frequently	<input type="radio"/> Sometimes	<input type="radio"/> Never

19.	How often do you refer a patient with ADHD to a:				
	WITH REGARD TO CHILDREN				
19.1	Psychologist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
19.2	Psychiatrist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
19.3	Neurologist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
19.4	Pediatrician	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
19.5	Dietician	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
19.6	Occupational therapist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
19.7	Physiotherapist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
19.8	Speech therapist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
19.9	Homeopath	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
19.10	Support group	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
	WITH REGARD TO ADULTS				
19.1	Psychologist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
19.2	Psychiatrist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
19.3	Neurologist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
19.4	Dietician	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
19.5	Homeopath	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
19.6	Support group	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never

20.	How often do you refer a patient with Depression to a:				
	WITH REGARD TO CHILDREN				
20.1	Psychologist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
20.2	Psychiatrist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
20.3	Neurologist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
20.4	Pediatrician	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
20.5	Dietician	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
20.6	Occupational therapist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
20.7	Physiotherapist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
20.8	Speech therapist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
20.9	Homeopath	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
20.10	Support group	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
	WITH REGARD TO ADULTS				
20.1	Psychologist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
20.2	Psychiatrist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
20.3	Neurologist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
20.4	Dietician	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
20.5	Homeopath	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
20.6	Support group	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never

21.	How often do you refer a patient with Generalized Anxiety Disorder to a:				
	WITH REGARD TO CHILDREN				
21.1	Psychologist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
21.2	Psychiatrist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
21.3	Neurologist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
21.4	Pediatrician	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
21.5	Dietician	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
21.6	Occupational therapist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
21.7	Physiotherapist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
21.8	Speech therapist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
21.9	Homeopath	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
21.10	Support group	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
	WITH REGARD TO ADULTS				
21.1	Psychologist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
21.2	Psychiatrist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
21.3	Neurologist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
21.4	Dietician	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
21.5	Homeopath	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
21.6	Support group	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never

22.	Who refers the patient with ADHD to you?				
	WITH REGARD TO CHILDREN				
22.1	Self	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
22.2	Psychologist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
22.3	Parents	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
22.4	Teacher	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
22.5	Occupational therapist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
22.6	Physiotherapist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
22.7	Speech therapist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
22.8	Dietician	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
22.9	Social worker	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
22.10	Other: <input type="text"/>	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
	WITH REGARD TO ADULTS				
22.1	Self	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
22.2	Psychologist	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
22.3	Family members	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
22.4	Dietician	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
22.5	Social worker	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never
22.6	Other:	<input type="radio"/> Always	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never