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**AN EXPLORATION OF THE CRITERIA USED BY EDUCATORS  
IN THE IDENTIFICATION OF CHILDREN WITH ATTENTION  
RELATED PROBLEMS.**

*by*

**FATHIMABIBI ESSACK**

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**SUPERVISOR : DR Z. NAIDOO**

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**DEDICATED**

*to*

***MY LATE BELOVED DAD***

*(for believing in me and being a source of inspiration).*

ATTENTION DEFICIT HYPERACTIVITY  
DISORDER.

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## **ABSTRACT**

The main purpose of this study was to determine the extent to which educators were able to identify behavioural descriptors pertaining to Attention Deficit Hyperactivity Disorder (ADHD) as outlined in the DSM-IV and to explore the management strategies employed by educators in the classroom in their attempt to deal with the disorder. The participants were 36 Foundation Phase educators (grades 1 to 3) in the South Durban Region. An analysis of data obtained from the administration of questionnaires to educators indicated that, although educators were able to identify behavioural criteria descriptive of ADHD, they were unable to differentiate between ADHD and Oppositional Defiant Disorder (ODD). They viewed the disorders as interrelated. However, they showed insight into the difficulties experienced by ADHD learners. This was evident in the effective classroom management practices educators adopted to deal with these special learners. Finally, knowledge of ADHD and qualification level appeared to have no impact on accuracy of educators' ratings.

**KEY TERMS** : ADHD, educators / teachers, DSM-IV, behavioural criteria, identify, management strategies.

**ABBREVIATIONS** : Attention-deficit / hyperactivity disorder (ADHD), Oppositional Defiant Disorder (ODD), Learning Disability (LD), Diagnostic and Statistical Manual of Mental Disorders (DSM), International Classification of Diseases (ICD), American Psychiatric Association (APA), Hyperkinetic Disorder (HK)

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Etiology of ADHD

# CHAPTER ONE

## CONTEXT AND PURPOSE OF THE STUDY

***“Attention deficit disorder does not reflect children’s attention deficits but our lack of attention to their needs”*** ( Breggin, 1996 : 14 - New York Times).

### 1.1 INTRODUCTION

Attention Deficit Hyperactivity Disorder (ADHD) represents one of the most frequently diagnosed neurobehavioural disorders in childhood, affecting perhaps as much as 20% of the school - age population (Shaywitz and Shaywitz cited in Koziol, 1999). Symptoms of ADHD, although sometimes subtle, are at the same time pervasive, influencing every aspect of a child’s life – home, school and relationships with peers. As Barbara Ingersoll, quoted in Neuville (1995 : 131) described it, ***“Like a pebble tossed into a pond, the hyperactive child’s problems cause ripples that extend far beyond the child himself.”***

Since its codification in 1980, a decade of research has resulted in the acceptance of attention disorder as an established diagnostic entity. Current concerns centre not so much on gaining acceptance of the disorder, but on gaining an appreciation and understanding of what is meant by ADHD (Shaywitz and Shaywitz, 1992). This has implications for educators in terms of their understanding and ability to identify behavioural criteria pertaining to ADHD. This particular issue is one of the critical questions that has framed this research.

The inability to attend consistently (particularly when activities are not in themselves highly motivating); the inability to consider

consequences (both negative and positive); together with a tendency to act without prior thought and to ignore previous experience; has been identified by the educational, medical and mental health communities as ADHD. Within the classroom these characteristics create real barriers to learning. These children are unable to complete work, remain in their seats or refrain from disturbing other learners. Students, who are inattentive and disruptive, present significant challenges to educational professionals. In fact, many children and adolescents who exhibit behaviour control difficulties in classroom settings are diagnosed as having ADHD or are likely to be diagnosed as such.

According to Barkley, Du Paul and McMurray (1990), they have a 70 to 80% chance of continuing to meet the diagnostic criteria in adolescence and adulthood. Students with ADHD are at high risk for chronic academic achievement difficulties, the development of antisocial behaviour and problems in relationships with peers, parents and teachers.

In spite of a wealth of knowledge about attention deficit disorders, most parents, teachers and diagnosticians continue to believe that these struggling individuals are merely being stubborn, defiant, or lazy (Jordan, 1992). This may lead to misdiagnosis and to intervention / management strategies adopted by the educator which may be detrimental to the learner's best interest. This perception is explored further in this study and constitutes an important critical question.

ADHD is characterised by developmentally inappropriate hyperactivity, impulsivity and inattention (American Psychiatric Association, 1994). Regardless of which type of attention deficit a child might have, the basic problem in the classroom is the inability to stay plugged into the learning environment. Whether hyperactive or passive, the child does

not absorb a steady flow of new information. Learners with ADHD and Attention Deficit Disorder (ADD) rarely comprehend more than 30% of what occurs around them unless they receive drill and practice with this information (Jordan, 1992). These learners have difficulty in mastering new skills, new information and new steps in social conduct. As time goes by, children who are ADHD or ADD become misfits in mainstream classrooms. The underlying disability of poor attention makes it impossible for them to stay plugged into what occurs outside themselves. They cannot fit into the regular world of formal education. They bring a cluster of disruptive habits and behaviours into the classroom, creating challenges that few teachers are equipped to meet (Jordan, 1992). Therefore, what is pertinent to this research is educators' management style / techniques in handling / assisting such learners so as to capitalise on their strengths and minimise the 'negative' aspects of ADHD. They need to become more sensitised to ADHD and learners afflicted by it.

ADHD is now recognised as the most common neurobehavioural disorder of childhood affecting children from their earliest infancy through school and into adult life. Estimates suggest that ADD affects 10 to 20% of the school-age population (Shaywitz and Shaywitz, 1991) and studies examining the prevalence of stimulant medication usage in children suggest that the disorder is being diagnosed more frequently now than a decade ago (Safer and Krager, cited in Shaywitz and Shaywitz, 1991). This introduces the third critical question of this study, namely, to what extent do educators' knowledge and qualification level enhance their ability to identify attention related problems in the classroom and ensure effective management thereof.

## 1.2 CONTROVERSIAL ISSUES

It is not surprising that ADHD has been linked to controversy, which persists even today. Although clinicians and professionals agree that ADHD is a prevalent disorder that brings with it significant morbidity, it has been difficult to obtain a consensus on basic attributes of the disorder. Accurate diagnosis of ADHD can be difficult because many of the symptoms occur frequently in children and decisions although guided by criteria, are still somewhat subjective (Shaywitz and Shaywitz, 1992). 3 to 5% of elementary school children are said to have ADHD (Barkley et al, 1990) with boys outnumbering girls by about 9 to 1. Thus, it is a common diagnosis albeit a controversial one. Some clinicians believe that it is too readily applied to children whom parents and teachers find difficult to control.

Armstrong (1996) questions whether the “*disorder*” really exists ‘*in*’ the child at all, or whether, more appropriately, it exists in the relationships that are present between the child and his/ her environment. His argument is that **“Unlike other medical disorders, such as diabetes or pneumonia, this is a disorder that pops up in one setting only to disappear in another”** (pp 425). ADHD children differ in the constancy of their symptoms. In some, the problem behaviours occur only at home or only at school, while the child shows adequate adjustment in the other setting. These situational ADHD children generally have less serious difficulties and a better prognosis than pervasive ADHD children, who show their symptoms in all settings.

Progress has been made in the evolution of the concepts of ADHD; increasingly precise constructs (inattention, impulsivity, and hyperactivity) have replaced the more global brain damaged syndromes that previously characterised children with behavioural and

learning difficulties. However, investigators and clinicians alike still have not been able to completely disentangle the behavioural from the cognitive components of the disorder. In part, this confusion reflects a carryover of the historical tendency to indiscriminately group learning problems with behavioural symptoms, such as in minimal brain dysfunction (Shaywitz, Schnell and Towle, cited in Shaywitz and Shaywitz, 1992).

The imbalance between the seeming explosion of ADHD diagnoses and the continuing enigmatic nature of the disorder is expressed most intensely in the treatment arena. According to Howlin (1998), clinicians, educators and parents often find their initial relief that their child's problems conform to ADHD, a known diagnostic entity, soon replaced by anxiety and frustration as they attempt to clarify just what the implications of the diagnosis are and which are the most reasonable and effective treatments.

On one level, the large number of children affected and the high degree of morbidity clearly mandate intense efforts to better understand the nature of the disorder. On another level, and of almost equal importance, is the necessity of informing the public, including the clinicians, educators and parents about ADHD; of providing a clearer understanding of what is already known; of synthesizing what has been learnt; and finally, of discarding outdated notions (notions not supported by empirical evidence).

### 1.3 **RESEARCHER'S INTEREST**

The researcher's interest in ADHD stems from personal experience. Firstly, having a family member diagnosed with ADHD and secondly, being given the opportunity to serve an internship at The Browns'



School (which provides specialised education for learning disabled pupils), where a third of the total number of learning disabled pupils are afflicted with ADHD. Furthermore, from subsequent interaction with educators and parents it became evident that there are grave misperceptions about the disorder together with ignorance and feelings of helplessness with regard to management and treatment of the disorder. This led the researcher to conclude that ADHD and those afflicted by it are sorely misunderstood.

Then, it struck home with painful clarity that ADHD is REAL – a real disorder, debilitating to the individual and causing impairment in all spheres of functioning (academic, personal, social). It becomes an obstacle in personal growth and academic achievement leading to heartbreak and despair, for both sufferers and parents / caregivers, as well as problematic for educators.

#### 1.4 ADHD AS A DISABILITY

Many people find it hard to view ADHD as a disability like blindness, deafness, cerebral palsy, or other physical disabilities. ADHD children look normal. There is no outward visible sign that something is physically wrong within their central nervous system or brain.

***“The child with an attention deficit can pay attention. But it takes that child 100 percent motivation to do what a normal child can do with 55 percent motivation . . . If you follow these children around throughout an ordinary day, the number of no’s and stops and don’ts they hear is astronomical”*** (Phillips, cited in Ratey and Johnson, 1997 : 158).

A child who has not been properly diagnosed and treated for ADHD faces failure and underachievement. Up to 30 to 50% of these children may be retained in a grade at least once. As many as 35% may fail to complete high school altogether. For half of such children, social relationships are seriously impaired, and for more than 60%, seriously defiant behaviour leads to misunderstanding and resentment by siblings, frequent scolding and punishment, and a greater potential for delinquency and substance abuse later on. Failure by the adults in a child's life to recognise and treat ADHD, can leave that child with an unremitting sense of failure in all arenas of life (Barkley, 1995).

Thus educators play a crucial role in the early identification of ADHD, since children spend most of their waking hours at school where the formal structured context requires one to attend, concentrate and focus for long periods. It is therefore important to study the efficacy of educators' ability to identify ADHD based on DSM IV criteria presented.

### 1.5 DEVELOPMENTAL COURSE

Klein and Manuzza (in Montague, McKinney and Hocutt, 1994) reviewed 20 outcome studies for general prognosis purpose and found that ADHD continues into adolescence, at which point it may branch out into the pattern of antisocial behaviour known as conduct disorder. According to teacher rating scales, 85 percent of children with conduct disorder also meet the criteria for ADHD (Pelham, Gnagy and Greenslade, cited in Weiler, Bellinger, Marmor, Rancier and Waber, 1999). As for later adjustment, a study of young men who had ADHD in childhood showed that, compared with controls, they had significantly higher rates of conduct or antisocial personality disorders (27 versus 8%), drug – use disorders (16 versus 3%), and full ADHD syndrome (31 versus 3%). Cognitive problems such as poor concentration tend

to persist into adolescence, with predictable academic results: poor grades, expulsion and early withdrawal from school (Weiler et al, 1999).

## 1.6 DIAGNOSIS OF ADHD

***“Isn’t ADHD overdiagnosed? Aren’t most children inattentive, active and impulsive?”*** (Barkley, 1995: 18).

Most children are more physically active than adults are, but their getting up and down, running back and forth is usually directed toward some goal. By contrast, the incessant activity of ADHD children seems purposeless and disorganised. Furthermore, a normal child can, if motivated, sit still and concentrate; an ADHD child has difficulty doing so. This inability to focus and sustain attention has a ruinous effect on academic progress. Children with ADHD have great difficulty following instructions and completing tasks. They are also extremely disruptive in the classroom, making demands for attention. Typically, it is not until such children enter school that their problem is recognised. What parents can put up with, a teacher with a class of 40 and a lesson plan to complete, finds it difficult to cope with these special learners. ADHD children also show poor social adjustment. They disrupt games, get into fights and throw temper tantrums. Such behaviour does not make them popular.

It is obvious that ADHD is one of the most prevalent childhood behavioural disorders in our society, with estimates ranging from 3 to 5% of school-age children (Cantwell, 1996; Weinberg, 1999 and Koziol, 1999). This condition produces a vast array of behavioural challenges for parents and teachers alike, including hyperactivity, distractibility, oppositionality and poor academic performance.

## 1.7 ADHD IN THE SOUTH AFRICAN CONTEXT

Educators, in mainstream schools in South Africa, face a particularly daunting task (Eloff and Pieterse, 1999). Some of the challenges include the following: large classes, inadequate and inappropriate provision of support services, inadequate and fragmented human resources development, inadequate and inappropriate assessment of need, socio-economic factors which place learners at risk and lack of resources and facilities (Department of Education, 1997).

These stressors combine to create a complicated learning environment. Learners with ADHD are approximated to be 5 – 7% of the learner population in South Africa (De Kooker, 1988; Hattingh, 1996). Although the incidence of ADHD in learners is affected by such factors as misdiagnosis, similarities in symptomatology with other learning and related challenges and differences in what are considered to be salient components of the disorder (Gumpel, Wilson and Shalev, 1998), it remains a controversial topic that defies professional consensus (Gumpel and Reid, 1998).

Consistent feedback from teachers and parents have, however, been shown to play a crucial role in the symptomatology and psychosocial development of learners with ADHD (Woods and Ploof, 1997). There is also evidence that points directly to the effect of the life experiences of a learner on his ability to concentrate in class – and interestingly, to the fact that often these problems are more evident at school than they are at home (Wood, 1998).

## 1.8 PURPOSE OF THE STUDY

The purpose of this study, therefore, is to determine the extent to which educators are able to classify / categorise behavioural criteria pertaining to attention related problems as ADHD. In so doing, we would be able to operationalise definitions of childhood behavioural disorders in a way that facilitates communication and prediction. If research on childhood behavioural disorders were better conceptualised from a classification perspective our understanding of these children would be enhanced.

***“A major goal (of research into ADHD) . . . should be the development of a classification system that more clearly defines and diagnoses learning disabilities, conduct disorders and attention deficit disorders and their interrelationships. Such information is a prerequisite to the delineation of more precise and reliable strategies for treatment, remediation and prevention that will increase the effectiveness of both research and therapy.”***

(Interagency Committee on Learning Disabilities, quoted in Shaywitz and Shaywitz, 1992 : 4).

As class sizes are increasing and inclusion of learners with special educational needs is encouraged, the accompanying teaching and administrative workload of educators is becoming more burdensome and often intolerable. To exacerbate matters, educators in recently *‘integrated’* schools have to also face up to the challenges of teaching children who are linguistically, ethnically, socially and economically more diverse than the contexts for which they were trained. ADHD is seen in all social classes, ethnic groups and nationalities (Barkley, 1995). It is seen three times more frequently in males than females.

Boys with ADHD are typically more aggressive than girls. Hence more ADHD (inattentive subtype) girls may go unrecognised and untreated.

Neuville (1995) states that those children without severe symptoms, especially without hyperactivity, often “*fall through cracks*” – they struggle in school and at home but are not obvious enough to demand special attention. These children often go undiagnosed and may have even less chance of future success than those more severe cases that have been effectively treated.

Katims (1988) states that attention can be thought of as the gate through which all experiences must pass in order to be learned. If a learner does not or cannot pay attention to a stimulus, learning will simply not take place. In selective attention, the learner must scan the stimulus field, locate the relevant dimensions of the task and attend to them in a sustained manner (Reason, 1999). Barkley (in Semrud–Clikeman, Nielsen, Clinton, Sylvester, Parle and Connor, 1999 : 582) defined attention as “***functional relationships between some environmental event or stimulus and behaviour***”.

How then do the stressors, already mentioned, and the many demands made on educators impact on their ability to classify behavioural problems of learners, more specifically, attention related problems, accurately. Within this context, are diagnoses of attention deficit disorders (ADD) made by untrained “*teacher observers*” valid and reliable?

## 1.9 OBJECTIVES OF THE STUDY

The objectives of the study therefore are to :

1. determine the extent to which educators are able to classify / categorise behavioural criteria pertaining to attention related problems as ADHD.
2. to explore the ways in which educators address attention related problems in the classroom.
3. contribute to the existing body of literature pertaining to the assessment and the management of ADD / ADHD by educators in the school context.

The theoretical framework adopted will be that of Skinner's (1981) general framework for classification research. This framework makes explicit the hypothetical nature of classifications and the need for ongoing, empirical scrutiny as a methodology for developing classifications of learning and attention disorders.

The critical questions to be answered in this research are as follows :

1. To what extent are educators able to identify behavioural criteria pertaining to attention related problems as ADHD?
2. In what ways are these attention related problems addressed in the classroom context?
3. Does knowledge and qualification level enhance educators' ability to identify attention related problems in the classroom.
4. Does knowledge and qualification level determine educators' management strategies in the classroom.

For the purpose of this study, the terms attention deficit disorder (ADD), attention deficit hyperactivity disorder (ADHD), and hyperactivity will be considered interchangeable.

### 1.10 RESEARCH METHODOLOGY

A survey method was employed to collect data from participants. A questionnaire was constructed to assess educators' knowledge and ability to identify criteria descriptive of ADHD as outlined in the DSM IV, as well as, to explore management techniques educators' employ in the classroom to deal with ADHD learners. This instrument was administered to the Foundation Phase (Junior Primary) educators (grades 1 to 3) in the randomly selected primary schools situated in the South Durban region of Kwa-Zulu Natal. Randomisation ensures representivity. However, this circuit only consisted of two types of ex-department of education schools (namely, Model C and House of Delegate). This therefore limits the generalisability of the results.

### 1.11 PRESENTATION OF CONTENTS

In Chapter Two of this dissertation, a historical perspective of ADHD, discussion of terms and international and national studies will be reviewed. The theoretical / conceptual framework will also be discussed. The focus of Chapter Three will be the methodology and description of the research instrument while Chapter Four will report on method of data collection and analysis of data. The discussion of the results will be the focus of Chapter Five. Possible recommendations, limitations of the study and conclusion will be drawn in the final Chapter Six.



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### 2.1 **OVERVIEW OF ADHD**

*“In a time of drastic change, it is the learners who inherit the future. The learned usually find themselves equipped to live in a world that no longer exists” (Hoffer, cited in Jordan, 1998 : 81).*

The twentieth century opened with disruptive learners who could not settle down, pay attention or obey the rules. At the turn of this century, scientists faced a thicket of impressions about the nature of attention deficits, poor decision making and inappropriate social behaviours. As the twentieth century moved forward, neurologists and educators began to separate the overlapping branches of the thicket surrounding the issue of attention deficit disorders (Jordan, 1998).

Technology that was developed during the last half of the twentieth century revealed the underlying neurological and biochemical reasons why 5% (Barkley, 1995) to 13% (Jordan, 1992, 1998) of the general population have chronic difficulty maintaining attention and following through on tasks without supervision. Evidence of brain dysfunction has been found in cerebral imaging studies, including functional magnetic resonance imaging, quantitative electroencephalography, and positron emission tomography (Kewley, 1998). Research shows that it is a generic, inherited condition that can be effectively managed (Kewley, 1998). Studies of twins suggest an exceptionally high concordance (Levy, Hay, McStephen, Wood and Wildman, 1997).

If untreated, the disorder may interfere with educational and social development and predispose to psychiatric and other difficulties. There is much myth and misinformation, fuelled by personal bias and the media, surrounding the existence and treatment of the condition, which has led to an assumption that it is overdiagnosed and overtreated (Cantwell, 1996).

Psychosocial approaches encourage the belief that poor parental discipline causes most children's behaviour problems. Such approaches generally ignore a biological basis to difficulties in self control, concentration and hyperactivity. Widespread ignorance exists about attention deficit hyperactivity disorder and the need for drugs as a component of treatment (Taylor and Hemsley, 1995).

Trite and simplistic explanations for the symptoms of the disorder are perpetrated which encourage the view that merely naughty children are being diagnosed to absolve parental responsibility. Therefore, considerable care and expertise is essential in assessing children's emotional and behavioral problems to ensure accurate diagnosis. There are two main myths that need to be overcome : what constitutes attention deficit hyperactivity disorder and that drugs used for treatment have serious side effects (Kewley, 1998).

Brain imaging science provides a clear view of these root causes of ADHD within the central nervous system. From the neurological root structure of inattention grows a determined stem or trunk that supports two main branches of this disorder. One branch is constantly in motion. It trembles, shakes and rustles noisily so that observers don't miss the fact that behavioural and attention problems exist. This branch in motion has been labeled in numerous ways : 'deficit in moral control,' minimal brain damage, minimal brain dysfunction, ADD + H (Attention

Deficit Disorder with Hyperactivity), ADHD (Attention Deficit Hyperactivity Disorder). The other branch of the inattention tree is quiet and passive so that observers often do not readily recognise an underlying problem with attention control. In fact, many specialists believe that this nonhyperactive branch should be removed from the ADHD tree because it seems to belong to another species of behavioral difficulties (Jordan, 1998).

In sum, attention deficit hyperactivity disorder is a common but complex condition characterised by excessive inattentiveness, impulsiveness or hyperactivity that significantly interferes with everyday life. The continuing presence of symptoms is essential for diagnosis. The condition manifests in many ways. For instance, some children may be only inattentive; others may be persistently hyperactive; for some, hyperactivity may lessen with time. The wide range of possible presentations can be confusing. There are also many complications that can mask or overshadow the underlying core symptoms and worsen with time (eg. oppositional defiant disorder, conduct disorder, depression, anxiety and obsessions). The core symptoms need to be assessed both at home and school. Children who are untreated and have conduct disorder are at much higher risk for later criminal activity (Kewley, 1998).

### 2.1.1 HISTORICAL PERSPECTIVE

A syndrome that was described by the ancient Greeks and has been widely observed by physicians since then is likely to have considerable face validity, but there continues to be disagreement about the diagnosis, cause, prevalence and treatment of attention deficit hyperactivity disorder (Husain and Cantwell, 1991). From the beginning of this century, the concept of the condition has evolved from it being a

biologically based disorder of behaviour control, from a condition with minimal brain dysfunction, to a disorder characterised by a deficit of attention (Douglas, in Levy, 1997).

According to Szatmari (cited in Prifitera and Saklofske, 1998), ADHD affects 9% of school - age boys and 3% of girls. Although this population of children was recognised as early as 1902, with Still's reference to children exhibiting "*deficits in moral control*," clinical nosology for the disorder was first introduced in the Diagnostic and Statistical Manual of Mental Disorders (DSM-II; American Psychiatric Association [APA], 1968) under the label of Hyperkinetic Reaction of Childhood. As the label implies, defining criteria emphasized the observable disruptive behavioural excesses characteristic of the disorder (Prifitera and Saklofske, 1998). During the decades of the 1940s and 1950s, the term "*Minimal Brain Damage Syndrome*" (MBDS) became the most widely used label for the cluster of behaviours that included hyperactivity, impulsivity, poor attention, mood swings, emotional explosiveness and inappropriate social behaviour.

Laufer, Denhoff and Solomons (cited in Jordan, 1998) introduced the term "*Hyperkinetic Impulse Disorder*" (HID). This term labeled children who could not keep still, were in constant motion, always restless even in their sleep and acted impulsively without considering consequences. In 1962, Clements and Peter (in Jordan, 1998) proposed the concept of "*Minimal Brain Damage*" (MBD). This new diagnostic model included consideration of a child's home environment, school performance, social behaviour, health history and emotional temperament.

Castellanos (1999) states that a revolution in psychiatric perspectives occurred thirty years ago with the birth of clinical neuroscience and neuropharmacology, loosening the grip of empirically unverified

psychoanalytic theories that held sway in psychiatry for half a century. By 1980, with the publication of the DSM–III (APA), psychiatry shifted toward a syndrome based diagnostic system, one that did not rely on unproven theories, but rather specific, observable criteria as the basis for making reliable diagnoses (Castellanos, 1999).

When DSM–III (APA, 1980) replaced DSM–II (APA, 1968), the diagnostic emphasis changed from one disruptive class of behaviour (hyperkinesis) to three (inattention, impulsivity, hyperactivity), and a change from the label Hyperkinetic Reaction of Childhood (HRC) to the labels Attention Deficit Disorder with Hyperactivity (ADHD) or without Hyperactivity (ADD) reflected an emphasis on the cognitive component of the disorder (Swanson, Cantwell, Lerner, McBurnett and Hanna, 1991). In the 1987 edition (DSM–III–R, APA, 1987), however subtype differentiation was abandoned because of lack of empirical support and a new generic category was created, ADHD was characterised by developmentally inappropriate degrees of inattention, impulsiveness and hyperactivity (Prifitera and Saklofske, 1998).

In DSM–III–R (APA, 1987), hyperactivity symptoms regained equal status in meeting the symptom count for ADHD, but an emphasis on the cognitive symptoms of inattention and impulsivity remained (Swanson et al, 1991). Since the behaviours of children in the population do not change along with the frequent changes in labels, the ADHD label in this study will be used to refer to cases meeting the criteria for HRC, ADD, ADHD and ADHD.

The most widely acknowledged current definition of ADHD is provided by the Fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM–IV, APA, 1994) which recognises three subtypes of ADHD : ADHD, Combined Type (ADHD / Com); ADHD, Predominantly

Inattentive Type (ADHD / I) and ADHD, Hyperactive – Impulsive Type (ADHD/ HI). The DSM–IV criteria outlines two clusters of symptoms, inattention and hyperactivity – impulsivity, each of which consists of nine behaviours. A child must present with six (or more) of the symptoms in either the inattentive or hyperactivity – impulsivity clusters or both to meet the diagnostic criteria for ADHD/I, ADHD/ HI or ADHD / COM respectively. The criteria specifies that the symptoms must be developmentally inappropriate, have been present before the age of 7 years, cause impairment in at least two settings, and result in a clinically significant impairment in social, academic or occupational functioning.

In summary, the terminology and classification of ADD is a perplexing issue in mental health. Every new version of the DSM has included a major revision of ADD criteria. Children with the same clinical features have been given a half dozen or so different labels. Therefore, the purpose of this study was to determine the extent to which educators in the Foundation Phase (Junior Primary) are able to identify behavioural criteria pertaining to attention related problems as outlined in the DSM–IV.

### 2.1.2 CONCEPTUALISATION OF ADHD

The concept of ADD possesses a broader definition than some of the earlier ones for related conditions, such as hyperactivity. Hyperactivity is just one aspect of the wider concept of ADD. Apart from hyperactivity, other core problems of the disorder include poor concentration, impulsiveness, easy distractibility, problems with speech, co–ordination, short term memory and associated behavioural and learning difficulties; in addition to oppositional or defiant behaviour.

Despite the description of ADD in well - researched papers, many medical professionals still doubted the existence of the condition, and it was frequently referred to as the *'diagnosis without a disease'* (Serfontein, 1994 : 2). According to a study commissioned by the *'Journal of the American Medical Association'* in 1998, ADD and ADHD affects 5% to 6% of the population (O'Connor, 1999). If unmanaged (there is no quick cure), children with ADD or ADHD are more prone to school failure and drop-out, substance abuse, accidental injury, suicide, interpersonal problems and involvement with the wrong side of the law, according to the same journal.

One United States doctor has said that *"ADHD will probably one day prove to be an umbrella term for a number of associated disorders."* Worrall, president of the South African Association for Learning and Educational Difficulties, agrees with this (O'Connor, 1999 : 6). There is no doubt that in the United States, ADD and ADHD are big business, medically speaking. Some sceptics maintain that *"ADHD is a total, 100% fraud,"* and place the blame for a cult of *"disorders"* squarely at the door of the *"cult"* of child psychiatry (O'Connor, 1999).

Others say that what we might call ADD has been around for centuries, and that the demands of modern schooling and society, combined with the discoveries of modern scientific medicine, are what have exposed the *"disorder."* This terminology creates negativity. Worrall prefers to use the term *"difficulty."* She explains that we all have difficulties with something and that demystification is a key part in the treatment of individuals with ADD and ADHD (O'Connor, 1999). However, with its negative connotations as a *"disorder,"* what these labels overlook are the high levels of energy, intuitiveness, creativity and enthusiasm that many of these children possess. It is alleged, for example, that

Beethoven, Mozart, Edison and Einstein were all “*sufferers*” who didn’t “*fit in*” but managed to succeed.

Bernstein (cited in O’Connor and Garson, 1999) believes that many children are “*mistakenly slapped with the diagnosis*” by “*stressed-out teachers*” who cannot cope with ordinary naughtiness and playfulness. She also blames rigid ideas about developmental milestones and how children should and should not perform in the classroom for the “*overdiagnosis*” of ADD and ADHD. Thus, the purpose of this study was to determine the extent to which educators were able to identify behavioural criteria pertaining to ADHD as outlined in the DSM–IV. In other words, are educators able to ‘*diagnose*’ ADHD?

## 2.2 EPIDEMIOLOGY

### 2.2.1 PREVALENCE

Figures regarding the prevalence of childhood hyperactivity vary widely depending on the definitions used and the populations sampled. For example, estimates of hyperactivity in clinic-referred children differ in critical ways from estimates describing rates in community based samples (Howlin, 1998). The factors that influence which children get referred for services (eg. presence of comorbid emotional difficulties, poor parental coping, significant peer problems at school) must also be taken into account (Woodward, Downey and Taylor, 1997).

ADHD is a chronic, debilitating disorder affecting approximately 3 to 5% of US elementary school-aged children (Barkley, 1990; Matson, 1993). However, as Barkley points out, these figures “***hinge on how one chooses to define ADHD, the population studied, the geographic locale of the survey, and even the degree of***



***agreement required among parents, teachers and professionals . . . Estimates vary between 1 [% and] 20%”*** (in Armstrong, 1996 : 425).

The point – prevalence of ADHD in the population ranges has been reported to range from 1.7 percent to 17.8 percent (Elia, Ambrosini and Rapoport, 1999). This wide variation may be explained by differences in informants (parent or teacher), culture (with less awareness of the disorder in countries such as the United Kingdom, where treatment with stimulant drugs was not available in the past, than in those such as the United States, where it was), and the degree of impairment needed for diagnosis (Elia et al, 1999).

The current criteria, with the inclusion of hyperactive – impulsive and inattentive subtypes, have resulted, predictably, in higher rates of diagnosis (Wolraich, Hannah, Pinnock, Baumgaertel and Brown, 1996; Baumgaertel, Wolraich and Dietrich, 1995). Data from a large epidemiological, community–based study conducted in London indicate that approximately 17% of 7 year–old male children exhibit pervasive hyperactivity (Taylor, Sandberg, Thorley and Giles, 1991). In comparison, around 3–9 percent of children exhibit ADHD (Szatmari, Offord and Boyle, 1989) and only 1.7 percent meet diagnostic criteria for Hyperkinetic Disorder as outlined in the International Classification of Diseases (ICD–10; World Health Organisation, 1988).

The ratio of males to females displaying the symptoms of ADHD varies considerably across studies. Estimates indicate that the ratio of affected boys to girls is 4:1 (Ross and Ross, 1982; James and Taylor, 1990). Among children referred to child psychiatrists or psychologists, the boy–to–girl ratio varies from 3:1 to 9:1 (Barkley, Fischer, Edelbrock and Smallish; 1990) whereas in community surveys of school – age

children it is closer to 2:1 (Cohen, Cohen and Kasen, 1993). In contrast, among older adolescents the ratio is 1:1 (Cohen et al, 1993), and among young adults, women predominate (Biederman, Faraone, Spencer, Wilens, Mick and Lapey, 1994). The different sex ratios in clinical and population based studies of children suggest the effects of referral bias (Elia et al, 1999).

According to Barkley (1990), children with ADHD may comprise as much as 40% of referrals to child guidance clinics. Boys with the disorder outnumber girls in both clinic-referred (approximately a 6:1 ratio) and community-based (approximately a 3:1 ratio) samples (Barkley, 1990). The higher clinic ratio for boys with this disorder may be a function, in part, of the greater prevalence of additional disruptive behaviours (eg. noncompliance, conduct disturbance) among boys with ADHD (Breen and Barkley cited in Du Paul and Stoner, 1994).

For girls, more severe behaviours must be displayed before a referral is made. As a result, girls are often older than boys at the time of referral (Brown, Madan – Swain and Baldwin, 1991) and it appears that ADHD in girls is significantly underdiagnosed (Brown et al, 1991; Silver, 1992). Thus, relative to other childhood conditions (eg. mental retardation, depression), ADHD is a “*high – incidence*” disorder that is particularly prominent among males.

### 2.2.2 AGE OF ONSET

The age at which hyperactivity first manifests can vary. A DSM-IV diagnosis of ADHD requires that pervasive hyperactive behaviours be present by the age of 7 years (APA, 1994), implying that the onset of difficulties is in early childhood. ADHD symptoms have been identified by parents when children are as young as 4 years (Sullivan, Kelso and

Stewart, 1990). Overactivity and inattention are commonly identified concerns by parents and teachers in preschool children, but for most children, such issues are less of a problem by the time they reach 5 years of age.

### 2.2.3 **ETIOLOGY**

There is disagreement among researchers as to the etiology of ADHD. Speculation has included environmental factors, genetic inheritance, prenatal influences, brain structural differences, neurological injury during birth complication, vitamin deficiencies, and food additives to name but a few. Most authorities agree that most likely there are multiple causes for a family of ADHD type disorders (D'Alonzo, 1996).

#### 2.2.3.1 **Neurological Variables**

Over the years, neurological factors have received the greatest attention as etiological factors. More recently, an imbalance or deficiency in certain neurotransmitters has been studied as an etiological variable (Anastopoulos and Barkley, 1988). Specifically, the neurochemicals dopamine and norepinephrine are presumed to be “*less available*” in certain regions of the brain, thus contributing to ADHD symptomatology.

#### 2.2.3.2 **Hereditary Influences**

ADHD appears to be a disorder that runs in families (Barkley, 1990). The results of behavioural genetic studies have provided evidence in support of a hereditary contribution to ADHD. For instance, there is a higher incidence of ADHD among first – degree biological relatives to adoptive parents and siblings for children with ADHD that were

adopted at an early age (Anastopoulos and Barkley, 1988). According to Levy et al (in Elia et al 1999), ADHD has a substantial genetic component, with a heritability of 0,75 to 0,91.

#### 2.2.3.3 **Environmental Toxins**

A variety of environmental toxins have been hypothesized to account for ADHD symptoms. Some of the more popular theories have implicated nutritional factors, lead poisoning and prenatal exposure to drugs or alcohol (Ross and Ross, 1982). For example, Feingold (1975) argued that certain food additives (artificial food colourings) led to childhood hyperactivity. Well-controlled studies that have examined this hypothesis, as well as similar assumptions about sugar, indicate that dietary factors play a minimal role in the genesis of ADHD (Barkley, 1990).

#### 2.2.3.4 **Conclusion**

The most prudent conclusion regarding the etiology of ADHD is that multiple biological factors may predispose children to exhibiting shorter than average attention spans along with higher rates of activity and impulsivity compared to other children. The most promising evidence points to a hereditary influence that may alter brain (i.e neurochemical) functioning. Several caveats should be kept in mind about this conclusion (Du Paul and Stoner, 1994). The fact that within-child variables appear to be primary causal factors, this does not denigrate the role of the environment in the maintenance of ADHD symptoms. For instance, as discussed later on in this chapter, interventions that involve the manipulation of environmental conditions can be quite effective in enhancing the functioning of children with this disorder. This relates to the second critical question of this study, that is, to explore

the ways in which educators address these attention related problems in the classroom in terms of the management / intervention strategies they adopt.

#### **2.2.4 CO – EXISTING DISORDERS / CO MORBIDITIES** **(behaviours associated with ADD & ADHD)**

A variety of disorders can be mistaken for ADHD or can co-occur. Physical causes of poor attention may include impaired vision or hearing, seizures, sequelae of head trauma, acute or chronic medical illness, poor nutrition, or insufficient sleep. Anxiety disorders, depression, or the sequelae of abuse or neglect may interfere with attention. Mental retardation, borderline intellectual functioning and learning disabilities are commonly mislabeled ADHD although they often co-occur (Dulcan and Benson, 1997). Academic difficulties are also associated with ADHD (Cantwell and Baker, 1991). Over one-third of clinically-referred children diagnosed with ADHD have comorbid reading difficulties (August and Garfinkel, 1990). Teachers frequently report that ADHD learners underachieve academically compared to their classmates (Barkley, 1990).

Comorbidity is present in many as two thirds of clinically referred children with ADHD, with high rates for oppositional defiant disorder, conduct disorder, mood disorders and anxiety disorders (Dulcan and Benson, 1997). Problems in the aggressive domain that are most frequently associated with ADHD include defiance or non-compliance with authority figures, poor temper control, argumentativeness and verbal hostility (Loney and Milich, 1982). Consequently, it is difficult for many ADHD children to initiate and maintain friendships with their classmates (Guevremont, 1990). Peer rejection status is stable over

time, implicating the chronic nature of these children's interactional difficulties (Parker, 1988).

Obsessive-compulsive disorder, Tourette's syndrome, chronic tic disorder and enuresis are often comorbid with ADHD. Speech and language delays are also common.

#### 2.2.4.1 **The Great Imposters : When it's not ADHD**

A number of factors can cause symptoms that mimic ADHD, such as : family problems (divorce, marital discord, family member's death), parenting/caregiving styles – if the caregiver adopts an '*authoritarian*' style, the child has few opportunities to make his/her own decisions; as opposed to a child with '*permissive*' caregivers, he/she then has free reign to set his / her own rules.

Other factors include temperament, fatigue, illness, hunger, diet (although behaviour changes have been reported in response to certain foods, researchers have found little evidence to support this claim (Umansky and Smalley, 1994). Another important variable is teacher-child mismatch, where the teacher's style clashes with a child's temperament and learning style. This may elicit somatic complaints from the child, as well as symptoms that mimic ADHD.

Schools are uniquely situated to provide information relevant to the assessment and treatment of ADHD across a variety of tasks, settings and observers (Atkins and Pelham, 1991).

Several factors indicate the importance of schools to the assessment of ADHD. Perhaps the most basic factor, is that children spend 6 hours a day, 5 days a week, 40 weeks a year, in school; making school an important setting for clinical assessment. More specific to ADHD, there is a wide range of information available in schools, such as a variety of academic and social tasks across a number of settings observed by multiple peers and adults. In fact, it would be enormously difficult to set up a laboratory for clinical assessment with the wealth of information available in schools (Atkins and Pelham, 1991).

The important role schools play in the assessment of ADHD is further evidenced in the realm of identification of the disorder. Although the symptoms of the disorder are commonly observed prior to age 6 in a child who is later identified as ADHD (Campbell, 1985), it is often not until the child enters formal schooling that the seriousness of these symptoms is first noted, typically by a teacher. This is due in large part to the relative objectivity of teachers, as compared to parents, and to the availability of peers who provide age-and-sex appropriate standards. Furthermore, teachers have frequent contact with the child and base their judgements on numerous observations of the child's behaviour in the natural environment, as opposed to a clinician's examination or interview. Therefore, it was altogether appropriate that teacher reports were emphasized in the formal diagnosis of ADD by the DSM-III (APA, 1980). Accordingly, the purpose of this study was to determine the extent to which Foundation Phase educators were able

to identify behavioural criteria pertaining to ADHD as outlined in the DSM-IV.

Elementary school teachers play a major role in the assessment of children's academic and behavioural problems. Due to their extensive contact with children in a variety of structured and unstructured settings and their knowledge of age-appropriate skills and behaviours, teachers provide important information for both clinical and research purposes (Atkins, Pelham and Licht, 1985; Shelton and Barkley, cited in Stevens, Quittner and Abikoff, 1998).

However, this procedure of using reports by untrained observers seems even more dangerous in view of the questionable validity and reliability of ADD diagnoses made by even highly trained evaluators. The original study, for the DSM-III, investigating the reliability of trained diagnosticians to distinguish between ADD and ADD-with-hyperactivity in a population in which all subjects met the DSM criteria, produced results which generated some concern (Mattison et al, in Sawyer, 1989). Interrater agreement was only 30% for ADD and 70% for ADD-with-hyperactivity.

In a later study, Brown (cited in Sawyer, 1989) obtained somewhat higher interrater agreements using a similar group of students, but even then one out of every 5 students was misdiagnosed. As a result, Brown concluded that one must have serious reservations about using the reports of untrained teacher observers to diagnose ADD, even when used for children already diagnosed using the DSM criteria. Contrary to this, Abikoff, Gittelman and Klein (cited in Atkins & Pelham, 1991) report that; there is considerable evidence that teachers are able to distinguish between children with and without symptoms of ADHD. However, the problem with the use of teacher ratings is the global and



subjective nature of these reports. For example, defiance toward a teacher increases the likelihood that a child will be rated as hyperactive or inattentive (Schachar, Sandberg and Rutter, in Atkins and Pelham, 1991).

Ullman, Egan, Fiedler, Jurenec, Pliske, Thompson and Doherty (1981) questioned why there was such behavioural heterogeneity among hyperactive children in the face of such apparent consensus on diagnostic characteristics. Loney (cited in Ullman et al, 1981) suggested that the heterogeneity may be due to variation in symptoms (traits), situations (state), scales (method), subjective reports (informants) or sequence (time). One possibility that has received little attention, however, which may be a major source of variation, is the role of the diagnosticians themselves. Therefore teacher reports are rarely sufficient for the assessment of primary symptoms of ADHD but are most effective when taken as one part of a comprehensive assessment battery (Lahey et al, in Atkins and Pelham, 1991).

Most often, educators are asked to evaluate children with psychological problems by completing standardised rating scales (Sandoval cited in Stevens, Quittner and Abikoff, 1998). These ratings are then used to make decisions concerning diagnosis, treatment and educational placement (Brown, in Stevens et al 1998). Teacher ratings are also frequently used in a research context as a means of monitoring treatment progress, and as indicators of long-term outcomes (Du Paul, Guevremont and Barkley, stated in Stevens et al, 1998).

Despite evidence indicating that teachers' ratings can discriminate between children and adolescents with higher versus lower levels of psychological difficulties (eg. Dalley, Bolocofsky and Karlin in Stevens et al, 1998), teachers are not always accurate and objective raters of

childhood behaviour. Often they lack the time or ability to notice specific children's behaviours. Alternatively, teachers may have frequent opportunities to observe children's conduct but may be biased by certain characteristics of the students. For example, Stevens et al (1998) found that ethnicity and socioeconomic status produced negative halo effects on teachers' ratings. Specifically, the videotaped behaviours of African American and poor children were evaluated as more deviant than Caucasian middle-class children, despite identical rates of disruptive behaviours.

Negative halo effects may be associated not only with certain demographic characteristics but also with the presence of certain childhood behaviours. These biases have been found to produce errors in teachers' judgements, particularly in the area of attention deficit hyperactivity disorder (ADHD). Mann et al (quoted in Stevens et al 1998: 1539) noted that the diagnosis is ***“based more on an assessment of developmentally inappropriate intensity, frequency, and / or duration of the behaviour rather than its mere presence. Such judgements increase the possibility of observer bias.”***

Researchers have found that although teachers' ratings can reliably differentiate children with and without attention deficits (Atkins et al cited in Stevens et al, 1998), including even those who exhibit hyperactivity (Brown, in Stevens et al, 1998), teachers often do not distinguish children with ADHD from those with symptomatology of the other disruptive behaviour disorders – conduct disorder (CD) and oppositional defiant disorder (ODD). For instance, Schachar, Sandberg and Rutter (mentioned in Stevens et al, 1998) investigated the relation between two respondents—teachers and blind observers—on measures of ADHD and ODD. They found a negative halo effect of oppositional

behaviours on hyperactivity ratings but no halo effect of hyperactivity on oppositional behaviours. Thus, regardless of their activity level, children exhibiting defiance or aggression were judged as having ADHD.

A second factor that may influence teacher's ability to distinguish between ADHD and ODD is their knowledge of and educational background in ADHD. Little is known about how teachers' knowledge of the disorder is associated with their ratings or their use of particular intervention strategies (Greene, 1995). To date, no study has systematically evaluated the relation between knowledge of ADHD and teachers' ability to discriminate this childhood disorder from others (Stevens et al, 1998). The researcher of the present study hypothesized that greater knowledge of the disorder would heighten teachers' awareness of ADHD symptomatology, resulting in more effective management techniques.

Despite surface consensus on the major symptoms (eg. Schragar, Lindy, Harrison, McDermott and Wilson, cited in Ullman et al, 1981) diagnosticians may differ on which of the various factors to consider and how heavily to consider them when they make actual diagnoses. First, determining just how much activity or distractibility constitutes symptomatic behaviour is a subjective judgement. As such "*hyper*" activity is in the "*eye of the beholder*" (Ullman et al, 1981). It would be useful to determine what criteria are being used by the '*beholders*'. Thus the purpose of this study was to determine whether educators employ criteria as evidenced in the DSM-IV for ADHD.

Prevalence estimates of hyperactivity may also vary with the profession of the diagnostician. For instance, data from Lambert, Sandoval and Sassone's (cited in Ullman et al, 1981) study could be interpreted as

indicative of considerable differences in the diagnostic policies of parents, teachers and physicians. A factor analytic study by Langhorne, Loney, Paternite and Bechtoldt (in Ullman et al, 1981) indicated that the source of the diagnostic information (eg. psychiatrist, teacher) is critical. For instance, inattention as rated by teachers loaded on different factors. This could imply that different professionals mean different behaviours when referring to the same symptom, although alternative explanations are possible.

Finally, this study examined whether professional experience with children with ADHD would lead to more accurate ratings. Interactions with learners with ADHD as well as in-service presentations and conversations with medical and mental health professionals about children with ADHD may be related to more positive perceptions of these children, as was found in a study examining teachers' attitudes about mainstreaming children with learning difficulties (Bender, Vail and Scott, 1995). Since many of the symptoms of ADHD show up at school and can profoundly affect a child's educational experience, school personnel play an important role in identifying and assessing the disorder.

### 2.3.1 **THE USE OF DIAGNOSTIC CRITERIA IN SCHOOL – BASED ASSESSMENT**

Currently, children with ADHD are diagnosed by trained professionals using the definitional and diagnostic criteria established by the APA in its Diagnostic and Statistical Manual of Mental Disorders (DSM-II, DSM-III, DSM-III-R, DSM-IV) (APA, 1968, 1980, 1987, 1994). DSM is a clinically derived classification system, rather than an empirically derived one, that is used in practice and research on mental disorders (Lyon; McKinney; cited in Montague, McKinney and Hocutt, 1994).

This system separates broad-band externalising and internalising disorders into specific categories such as CD, ODD or ADHD. Some psychologists argue against diagnosis due to consensus about clinical utility and stigmatization (Rosenhan mentioned in Schaughency and Rothlind, 1991). Other professionals consider it an academic enterprise, removed from practice. In school settings, it can provide a mechanism through which intervention is offered to children experiencing school difficulties. This study attempts to gage the kinds of interventions employed by teachers in the classroom in their effort to deal with ADHD learners.

ADHD has been defined and conceptualised in a variety of ways over the past several decades, thus leading to confusion among professionals regarding proper diagnosis and evaluation procedures (Barkley, 1990). More recently, there is emerging consensus that ADHD is characterised by a display of developmentally inappropriate frequencies of inattention, impulsivity and hyperactivity (APA, 1994).

According to Barlow (quoted in Du Paul & Stoner, 1994 : 22), ***“ADHD is best viewed as a result of a poor ‘fit’ between the biological endowment and characteristics of the child and the environment, such as the structure and prevailing contingencies in the classroom. In this context, diagnostic criteria provide only nomothetic suggestions about problem behaviour covariation controlling variables, and effective interventions.”*** Therefore, DSM criteria are supplemented with multiple assessment methods conducted across settings to determine the specific problem behaviours, controlling variables and possible intervention strategies that are applicable for an individual student. The diagnosis of ADHD is

but one step in the process of designing and evaluating interventions to promote greater classroom success.

Behaviour rating scales are routinely used in schools in the identification process of children's maladjustment (Mioduser, Margalit and Efrati; 1998). Teachers' ratings have shown to be useful aids in the diagnostic process for many forms of behaviour disorders, particularly the externalising disorders, which are often most salient in the classroom settings (Pelham, Gnagy, Greenslade and Milich, 1992). The currently predominant diagnostic approach for attention-deficit hyperactivity disorder, used by clinicians and professionals alike, relies on the DSM-IV criteria (APA, 1994). Two parallel symptom lists emphasize symptoms of inattention, poor concentration and disorganisation versus features related to marked overactivity and behaviour impulsivity. These symptoms must lead to clear impairment in school, home, and peer group and are often accompanied by secondary features of aggression, learning difficulties and underachievement and peer rejection (Mioduser et al, 1998).

With the amount of attention being directed to ADHD in the schools, it is important to maintain the perspective that children with these disorders need the services of both clinical and educational communities. Neither community can address these issues well in isolation. The clinical field has long grappled with issues of classification, diagnosis, underlying pathophysiology, associated difficulties and treatment of children and youth with this syndrome (McBurnett, Lahey and Pfiffner, 1993). Despite years of research and major advances in understanding and treating students with the disorder, ADHD continues to be a functionally and educationally impairing condition.

In all aspects of American mental health, the DSM approach has been the most widely accepted procedure for diagnosing ADHD and has become the 'de facto' definition of the disorder since the introduction of DSM–III (APA, 1980) (McBurnett et al, 1993). In South Africa as well, the medical model is widely used by both clinicians and mental health professionals to diagnose mental and behavioural disorders.

### 2.3.2 **IMPLICATIONS FOR EDUCATIONAL ASSESSMENT**

#### 2.3.2.1 **Relevance**

Educationally based assessment of ADHD can capitalise on the considerable efforts that have gone into developing the reliability and validity of the DSM–IV ADHD diagnosis. Among disabilities that affect educational achievement, ADHD is unique. The following characteristics of ADHD makes its DSM–IV diagnosis more relevant to educational identification than some of the other categories of disabilities (McBurnett et al, 1993) :

1. The diagnostic criteria for ADHD in DSM–IV were based largely on their predictive validity for educational impairment.
2. ADHD is a syndrome that is diagnosed by the accumulation of a number of symptoms, not any one of which is necessary to make the diagnosis or is definitive of the disorder. The symptoms are normal developmental phenomena that attain their status as symptoms only because of their severity or limitations on functioning. ADHD symptoms often occur in normal children and in children with problems other than ADHD, therefore, the use of a reliable assessment procedure is critical.
3. As a result of the variability of ADHD behaviour, its comparison across time intervals, individual measures, observers and settings are often quite unreliable (Rutter, 1983).

4. Acceptable reliability of the *Clinical Diagnosis of ADHD* has been achieved through the use of multiple sources of symptom information, symptom reports from observers who have known the child for at least 6 months and who can give an “average” report of symptom expression over that interval, structured or semi-structured interviews, and internally consistent symptom lists.

Clinical diagnosis serves several purposes in a comprehensive educational assessment. First, the use of rigorous procedures results in the identification of a maladaptive syndrome, with considerable validity, research to support its distinctiveness from normal childhood patterns. This helps counter criticisms that we are not dealing with a “real” disorder but, instead, are labeling and discriminating against children whose behaviour is normal but annoying to adults (McGuinness, in McBurnett et al, 1993). Further, an answer to the question, what is the problem can reduce discomfort and bewilderment with not knowing, and may be especially helpful in cases in which there is inappropriate blaming of a teacher, a parent, or a child. The diagnosis also greatly facilitates communication of the characteristics of the child’s problems (McBurnett et al, 1993). Second, the diagnosis provides important probabilistic hypotheses about an individual child’s needs, based on the subtype and its specific correlates (Barkley, 1990). These hypotheses guide subsequent problem-oriented assessment and planning of treatment and educational supports.

Third, the ADHD diagnosis provides important information regarding overall management of the ADHD symptoms based on accumulated research findings and clinical expertise (Pfiffner and Barkley; Pfiffner and O’Leary; Swanson; cited in McBurnett et al, 1993). The second critical question of the present study addresses this issue, that is, how do educators handle these attention related problems in the classroom



in terms of, the management strategies they adopt. For instance, knowing that a child has ADHD probably means that the child needs more frequent reinforcement and redirection than is typically provided, and that whatever reinforcement system is set up will need to be modified as it loses its novelty and interest for the child.

### 2.3.3 LIMITATIONS OF THE DSM APPROACH

Although DSM criteria are important components of the evaluation process, there are several limitations that must be considered (Du Paul and Stoner, 1994) :

1. The criteria for ADHD were developed in the context of a medical model, thus implying that the problem lies within the child. The conceptualisation of the child as having a disorder may result in discrediting environmental variables that may play a role in causing or maintaining the problem behaviours.
2. The use of a psychiatric classification system promotes a search for pathology that could, under certain conditions, result in overidentification of children with behaviour disorders. This suggests the need for a multimethod assessment approach wherein objective measures (behavioural observations) supplement the use of more subjective assessment techniques such as diagnostic interviews. In the present study, single source informants (that is, educators) were targeted to determine the extent to which behavioural criteria pertaining to ADHD as outlined in the DSM-IV could be identified.
3. A third potential drawback to the use of a psychiatric classification system is that the diagnostic label may compromise a child's self-esteem as others come to view him / her as "*disordered*." The possible effects of being diagnosed ADHD have not been empirically investigated to date (Du Paul and Stoner, 1994).

Barkley (1995) lists the following problems with the DSM–IV guideline of ADHD :

1. DSM–IV criteria makes no adjustments for age. Since children are less likely to show the behavioural criteria as they mature, using one cut–off score for all ages means too many young children and too few older children will be diagnosed as ADHD.
2. The guidelines make no adjustment for gender, despite the fact that girls show the listed behaviours less than boys. This means that they will have to display more severe behaviour problems compared to boys in order to be diagnosed ADHD.
3. DSM–IV requires that the behaviour problems show up in two or more settings (home, school, work). In practice, this means that parents and teachers must agree that the child has ADHD, before the child can be given that diagnosis—and experience shows that parent–teacher disagreement is quite common.
4. The DSM criteria do not tell us just how deviant from normal a child’s “*developmentally inappropriate*” behaviour must be, which makes diagnosis difficult in borderline or mild cases.

#### 2.3.4 **OVERVIEW OF ASSESSMENT METHODS**

The diagnosis of ADHD, like any psychiatric diagnosis, is complicated by the fact that it is a behavioural diagnosis. The term ADHD can be thought of as a descriptive label denoting a cluster of behaviours that commonly occur together. The task of the diagnostician is to determine whether the child is displaying the behaviours characteristic of ADHD at a developmentally inappropriate level and to a problematic or symptomatic degree. This calls for behavioural assessment, using a strategy which incorporates different informants and a variety of procedures, such as interviews, rating scales and observations. Such a

multilevel, multimodal approach to assessment and identification is recommended by Montague, McKinney and Hocutt (1994).

*Multilevel* refers to the different stages in the assessment process. This is similar to the multistage assessment procedures that Barkley (quoted in August, Ostrander and Bloomquist, 1992) mentions, that have been successfully used to enter clinic-referred children in treatment studies of ADHD. These assessments rely on several informants, employ multiple settings, and use a variety of assessment instruments. Montague et al (1994) adopt the term *multimodal* to refer to the different types of instruments and procedures that are used to assess children with ADHD.

Loeber and colleagues (cited in August et al, 1992) proposed the use of multiple "gates" for identifying "high risk" children. This procedure consists of a stepwise sequence of assessments, with each successive assessment designed to narrow down the target group derived from preceding assessments. This procedure may be useful as an epidemiological screening method of diagnostic assessment for ADHD. While a multigating screening method represents a more comprehensive and parsimonious means of diagnosing ADHD in a school-based population, it is unclear if such a method will increase diagnostic precision when compared to a conventional single-stage assessment (August et al, 1992). In the present study, a single stage assessment was used targeting specifically Foundation Phase educators and their ability to identify behavioural criteria pertaining to ADHD as outlined in the DSM-IV.

A behavioural assessment approach is typically employed in the evaluation of ADHD wherein multiple methods of data collection are utilized across informants and settings (Atkins and Pelham, 1991;

Barkley, 1990). The major components of the evaluation include interviews with the child's parent(s) and teacher(s), questionnaires completed by parents and teachers, and observations of the child's behaviour across multiple settings and under variant task conditions (Barkley, 1990). Several assessment techniques employed by school psychologists have limited utility in the diagnostic evaluation of ADHD. The results of cognitive, neuro-psychological and educational tests typically are not helpful in determining whether a child has ADHD or not (Du Paul and Stoner, 1994).

Of the available observational procedures, there are a plethora of well standardised teacher rating scales (eg. Child Behaviour Checklist [Achenbach, in Weiler et al, 1999]; Teacher's Report Form [Achenbach, 1991]); the Conners' Parent and Teacher Rating Scales, the ADHD Rating Scale (Du Paul, cited in Montague et al, 1994) and the Swanson, Nolan and Pelham Rating Scale (SNAP) (Swanson and Pelham, in Montague et al, 1994) provide the most efficient method for obtaining quantitative information pertaining to a child's typical behaviour in his / her natural environment (Schaughency and Rothlind, 1991).

Content, however, is critical to a questionnaire's diagnostic utility (Weiler et al, 1999). If the DSM-IV criteria represents the current, conventional standard by which a diagnosis of ADHD is made, it is preferable to include questions representing these criteria. This approach of including questions that represent extant diagnostic criteria has been used by a number of investigators (Baumgaertel et al, 1995; Pelham et al, 1992; Wolraich et al, 1996). Accordingly, the researcher of the present study constructed a questionnaire, incorporating a DSM-IV ADHD rating scale (based on DSM-IV criteria) developed by Cunard (1995) of The Browns' School, to assess educators' ability to identify criteria pertaining to ADHD.

## 2.4 CLASSROOM – BASED INTERVENTION STRATEGIES

School-aged children spend 6 to 8 hours per day, 5 days per week in school and classroom settings. These environments are characterised by requirements for children to follow rules, interact appropriately with other children and adults, participate in adult-directed instructional activities, learn what is being taught, and refrain from disrupting or disturbing the learning and activities of others. The ability to regulate behaviour in accordance with the changing demands and constraints of their environment is a crucial skill for children to master.

Expectations for behavioural control vary across age, settings and cultures. Approximately 17 percent of school-age children will exhibit a combination of poor attentional skills, overactivity and / or impulsiveness, and for these children developing the ability to independently control and modulate their behaviour will present a serious challenge (Taylor et al, cited in Howlin 1998). '*Hyperactivity*' is a word often applied to this triad of symptoms. Most children exhibit a degree of hyperactivity in some situations, and epidemiological studies indicate that this tendency is continuously distributed in the population (Howlin, 1998).

For teachers, imparting the knowledge and skills comprising the curriculum and teaching children to behave in a manner consistent with social, cultural, and organisational requirements are demanding tasks. This is even more demanding when it involves children diagnosed with ADHD, as the behaviours characteristic of these children frequently interfere with classroom learning and socially acceptable behaviour (Du Paul and Stoner 1994). Barkley (1995) states that children with ADHD experience their greatest difficulties in adjusting to the demands of school. This is reinforced by D'Alonzo's (1996) statement that school is

where most individuals with ADHD encounter serious difficulties. Barkley (1995) comments further that approximately a third of all ADHD children are held back in school in at least one grade during their educational career, up to 35% may never complete high school, and their academic grades and achievement scores are often significantly below those of their classmates. Complicating this picture is the fact that more than half of all hyperactive children also have serious problems with oppositional behaviour. This explains why between 15 and 25% of ADHD children will be suspended and even expelled from school because of conduct problems (Barkley, 1995).

Teachers, frequently respond to the challenging problems exhibited by children with ADHD by becoming more controlling and directive. Over time, their frustrations with these difficult children may make them more negative in their interactions as well. While it is uncertain how a negative child–teacher relationship affects the long–term adjustment of ADHD children, it can be expected to worsen the already poor academic and social achievement of these children, reduce the motivation to learn and participate in school, and lower self esteem. All of this could ultimately result in school failure and dropping out. A positive teacher–student relationship, to the contrary, can improve academic and social adjustment not only in the short term but also in the long term. Adults who have been hyperactive as children have reported that a teacher’s caring attitude, extra attention, and guidance were “*turning points*” in helping them overcome their childhood problems (Barkley, 1995).

The fact is that the single most important ingredient in an ADHD child’s success at school is the teacher (Barkley, 1990). Therefore, the second critical question of this study addresses the issue of educators’ management techniques/ intervention strategies as an attempt to deal

with attention related problems in the classroom. According to D'Alonzo (1996), ADHD learners often need modifications in the instructional approach and the physical arrangements in order to succeed. Classroom interventions can be grouped into 3 types: instructional strategies, environmental structuring, and behaviour management. Minor modifications to the structure of the classroom and the format and timing of lessons may be helpful. The use of bright, highly stimulating materials (Zentall, cited in Howlin, 1998) can also be incorporated as educational materials in the classroom.

Specific behaviour management techniques (eg. contingent praise, ignoring, verbal reprimand, token economies, response cost) can also be integrated into the classroom. In terms of the empirical validation of such techniques, many of the studies investigating the effectiveness of classroom management strategies are conducted in specially-designed classrooms (Carlson, Pelham, Milich and Dixon, 1992). The consistent and effective use of such techniques can place a high demand on teachers. Hence, given the pressures involved in managing the typically large numbers of pupils in mainstream classes, some teachers may be unable to adhere to a program that requires intensive input to one pupil.

Developing open lines of communication between home, school and professionals should be a priority. Linking reward programmes between home and school can also be beneficial. To date, researchers in the area of interventions for children with ADHD have focused on issues and strategies pertaining to managing social behaviour and deportment in the classroom, primarily via medication and contingency management. However, optimizing social behaviour, avoiding behavioural maladjustment, and preventing antisocial behaviour represents only one aspect of school and classroom concerns

regarding ADHD. The other side of the coin is to optimise academic achievement and performance of identified children. Thus educators play a critical role in arranging for and conducting instruction to promote both academic and social skill development so as to prevent and solve problems in these areas (Du Paul and Stoner, 1994).

Meyer and Evans (quoted in Du Paul and Stoner, 1994) state that professionals involved with children with ADHD should take an educative approach to behaviour problems. From this perspective, interventions for behaviour problems have the explicit goal of teaching identified children the skills and knowledge necessary to replace problem behaviours with acceptable ones. This approach is an alternate to interventions that are solely child-focused and primarily concerned with the elimination or reduction of problem behaviours.

Psychostimulant medications (eg. methylphenidate / Ritalin) have been the most extensively studied intervention for ADHD and related disruptive behaviour disorders. In fact, over 70% of children with ADHD taking these medications exhibit behavioural, academic and attentional improvements, according to parent/teacher ratings or direct observations (Barkley, 1990). Medication helps individuals with ADHD improve their attention span and reduce distractibility. Sometimes modifying the classroom environment is inadequate on its own. Medication works best with behaviour management techniques and counselling (Daniel, 1992).

A plethora of empirical evidence indicates that psychostimulant medications significantly enhance certain behavioural, cognitive and academic processes among children with ADHD (Anastopoulos, Du Paul and Barkley, 1991). The use of stimulant drugs results in an immediate and often dramatic improvement in behaviour (Elia et al,



1999). Attentiveness improves, and interpersonal interactions, including those with parents, are less confrontational. Teachers do not need to work as hard to control the children and are more approving of their behaviour.

However it seems that a multimodal treatment plan will be more effective as an intervention strategy to implement in classrooms, specifically for the benefit of ADHD learners. This is supported by Parker's (quoted in Neuville, 1995 : 13) description of the treatment of ADHD : ***“the four cornerstones of the treatment plan . . . include medical management, behaviour modification, educational planning and psychological counselling.”***

## 2.5 INTERNATIONAL AND NATIONAL TRENDS

### 2.5.1 Diagnostic Classification and Prevalence

In European countries, the most widely used diagnostic classification scheme is that given in the tenth edition of the *International Classification of Diseases* (ICD-10; WHO 1988). Within the ICD scheme, the category Hyperkinetic Disorder (HK) is used to diagnose children who exhibit pervasive difficulties in all 3 of the core areas; inattention, impulsivity and overactivity. The criteria for HK are more inclusive, and therefore more stringent, than the general criteria for ADHD. The ADHD mixed hyperactive / inattentive subtype would be the most similar diagnostically to HK (Howlin, 1998).

Despite originating from the North American diagnostic nomenclature the term ADHD has entered the lexicon of professionals in the United Kingdom. Thus, it is imperative that those involved in the assessment and management of children with difficulties appreciate the subtle, but

important distinctions between the terms *hyperactivity*, which refers to a tendency to behave in an overactive, inattentive and impulsive manner; ADHD, which should be considered in cases where some features of hyperactivity are pervasive, developmentally inappropriate, of early onset and functionally impairing; and *hyperkinetic disorder*, which is similar to ADHD but more inclusive (Howlin, 1998). Clinical diagnoses of both ADHD and HK are based on overt, behavioural symptomatology.

The past twenty years have seen the development of diagnostic criteria in both Britain and America. In 1981, the criteria of the *Diagnostic and Statistical Manual* (DSM–III) departed from those of the *International Classification of Diseases* ninth edition (ICD–9) in creating subtypes of attention deficit disorder with and without hyperactivity. Meanwhile, the ICD–9 continued to emphasize “*pervasive hyperactivity*” as the hallmark of the so called hyperactive syndrome. Presently, however, DSM–IV and ICD–10 research criteria for attention deficit hyperactivity disorder and hyperkinetic disorder are identical, showing a rapprochement between American and British approaches (Levy, 1997).

British professionals have traditionally used the more restrictive World Health Organisation and ICD–10 term “*hyperkinesis*” which means severe, persistent hyperactivity. Many people wrongly believe that attention deficit hyperactivity disorder is the less severe form of hyperkinesis. In fact, hyperactivity is just one possible feature of the disorder (Kewley, 1998). The DSM–IV criteria of the American Psychiatric Association provides a broader, more realistic concept and includes all possible manifestations of the disorder. Reliance on hyperkinesis as a benchmark of diagnosis excludes many children displaying other manifestations of attention deficit hyperactivity disorder

and these children are often denied appropriate management of their problems (Kewley, 1998).

In recent years, interest has focused on a group of children whose primary problem is neither intellectual nor emotional and is not the result of defiance, but who nevertheless behave in a way that does not meet the expectations of family and school. In the USA, this group of children is described as having attention-deficit / hyperactivity disorder (ADHD) (Reason, 1999). However, in Britain, there is much myth and misinformation fuelled by personal bias and the media, surrounding the existence and treatment of the condition, which has led to ADHD being misunderstood and underrecognised (Kewley, 1998).

In Britain, the concept of ADHD has until recently been largely unfamiliar to many professionals and the general public. This is due in part to the different response of the psychiatric establishment to the abandonment of the earlier Minimal Brain Dysfunction category. In contrast to the American approach, the tradition in Europe and Britain has been to use the diagnostic systems of International Classification of Diseases (ICD), published by the World Health Organisation which takes a more exclusive view (Reason, 1999).

The main difference is in the strict requirement for pervasiveness and persistence found in the ICD-10 criteria for Hyperkinetic Disorder. This means that behaviours that manifest predominantly in one situation do not constitute grounds for a diagnosis. Furthermore, the DSM-IV has an either / or clause with regard to hyperactivity-impulsiveness or inattention, whereas ICD-10 requires that both significant inattention and hyperactivity be observed (Reason, 1999).

As a consequence, children meeting the criteria for Hyperkinetic Disorder are far less common than those reaching DSM criteria. The estimated prevalence in Britain has been 1,5% in 7-year-old boys in inner cities and about 0,5% to 1% of the child population. Although small in number, this group of children is likely to show more severe signs of problems and subsequently to be at a greater risk during development. Thus it seems that cultural demands can define ADHD. For in the USA, the prevalence rate has been reported to range from 2% to nearly 10% of the child population. It seems that individual differences might have become unduly pathologized by previous criteria (Reason, 1999). It is expected that prevalence rates will decrease, in light of the more recent stringent DSM–IV criteria.

In light of the cultural and historical influences on the development of the classification systems, the following conclusions can be drawn (Reason, 1999) :

- ADHD is a psychiatric category originating in the USA. Previous definitions have made it a broad, inclusive and heterogeneous grouping of children observed to manifest different patterns of overactivity, impulsiveness and / or inattention.
- European practice has favoured the term *hyperkinetic disorder*, which has more stringent parameters and a lower prevalence.

In the South African context, the DSM–IV classification of ADHD is most widely used by mental health professionals, and learners with ADHD are approximated to be 5 – 7% of the learner population (De Kooker, 1988; Hattingh, 1996).

Given past prevalence rates in the USA, defining ADHD as a disorder can be problematic. The adoption of a disease model may have advantages in helping those with severe, persistent and pervasive

problems conceptualise their difficulties in a way that aids therapy. But, in the case of the large and heterogeneous group of children that have been subsumed under the heading ADHD, such advantages may be outweighed by the disadvantages. For instance, the high prevalence of ADHD in the USA may trivialise the severe problems of a small proportion of children currently identified in Europe under the heading “*hyperkinesis*” (Reason, 1999).

In sum, the definition of ADHD is ever evolving. Other countries may not even recognise the disorder as such. It may be called a conduct problem in Great Britain, or children may simply be branded undisciplined in Eastern Europe and the countries of the former Soviet Union. It’s unfortunate that such labels perpetuate the misperception of ADHD as a problem of personal character; the fact remains that ADHD is a neurologically determined disorder and is found throughout the world. When it comes to diagnosis, however, methods of quantifying the symptoms vary (Barkley, 1995).

### 2.5.2 **Treatment**

Approaches to treatment have also progressed. An important advance was the use of systematic behaviour modification techniques in the management of disruptive classroom behaviour (O’Leary, Pelham, Rosenbaum and Price, 1996). In America and Australia, however, management has been characterised by an increasing use of stimulant medications such as methylphenidate and dexamphetamine with 3 – 5% of primary school children treated in some American states. Many studies have shown positive effects of stimulant medication in most children diagnosed with attention deficit hyperactivity disorder (Barkley, in Levy, 1997; Elia, Borcharding and Rapoport, 1991).

Public concern about overuse of medications has alternated with increasing parental demands for treatment for the disorder. The apparent differences in the use of stimulant drugs exist within countries, namely within America and Australia (Valentine, Zubrick and Sly; Rappley, Gardiner, Jetton and Houg; cited in Levy, 1997). Many clinicians in both Britain and America have remained committed to environmental explanations of behaviour and have been loath to use drugs. Additionally, disputes over whether attention deficit hyperactivity disorder is a specific abnormality or merely the extreme end of a range of behaviour have clouded the issue.

In South Africa, there has been an increase in the diagnosis of ADHD and in the prescription of Ritalin as a form of treatment. One wonders whether ADHD is suddenly being overdiagnosed or is it being used as an umbrella term under which all the disruptive and behavioural problems are subsumed. Some parents, teachers and professionals are advising or opting for alternate approaches which include nutritional changes, homeopathy, occupational therapy, neurophysiotherapy and polarity therapy. O'Connor and Garson (1999) advocate a "*combined management*" approach including educational intervention and counselling or occupational therapy.

2.6

### **THE PRESENT STUDY**

The theoretical framework adopted will be that of Skinner's (1981) general framework for classification research. This framework makes explicit the hypothetical nature of classification and the need for ongoing, empirical scrutiny as a methodology for developing classifications of learning and attention disorders.

### 2.6.1 **Theoretical Models in the Classification of ADHD.**

The distinction between clinically orientated and quantitative approaches to classification can be conceptualised in terms of differences between categorical and dimensional models. For ADHD, the distinction is not as sharp as in other areas of classification.

Morris and Fletcher (1988) summarised several models that have been used for classification. *Categorical models* are based on the assumption that neurobehavioural problems represent disease entities, that is, discrete disorders that are presumed to follow a syndrome model in terms of etiology, pathogenesis, clinical characteristics and prognosis – the usual framework in thinking about many disease processes (Shaywitz and Shaywitz, 1988). Clinical interviews and examinations of the individuals are used to place them into specific diagnostic groups based on their behavioural or historical attributes. The main drawback, however, is the expectation that most children fit neatly into such discrete entities.

In contrast, the dimensional paradigm conceptualises neurobehavioural problems in terms of a quantitative deviation from “*normality*”, rather than as discrete entities (Morris and Fletcher, 1988). In this system, rating scales, test scores and inventories are used to quantify individual differences along particular dimensions. In ADHD, children may be assessed by rating scales along such dimensions as inattention, hyperactivity and aggression. The problem with dimensional classifications concerns the definition of appropriate cut off points (Shaywitz and Shaywitz, 1992).

Considerable controversy exists over which system is most appropriate in the definitions of attention and related disorders (Shaywitz and

Shaywitz, 1991). A pure categorical model would be *monothetic*, that is represented by a set of specific attributes that are both necessary and sufficient for each member of the group (Bailey, 1973). However, *polythetic* classifications of ADHD are more likely. These classifications form groups based on shared features. No single feature is either necessary or sufficient, and may be shared across groups. Therefore, it seems that the classification of childhood disorders of attention, learning and behaviour will be enhanced by polythetic classifications based on hierarchical models in which children are placed into groups, according to a set of identifying characteristics on which members may overlap on a single attribute, but differ in specific profiles (Morris and Fletcher, 1988). The hierarchical nature represents the tiered decisions underlying the designation of ADHD. For the purposes of this research such a model will be adopted.

#### 2.6.2 **Issues in Classification Research**

Classification research is a time honoured tradition in many areas of science (Millon, 1991). Classification issues are complex, embedded in the research and interventions of any childhood disorder. One of the major problems with behavioural research is that classifications are often implicit, poorly elaborated and not clearly recognised, leading to biased conclusions (Fletcher, Francis and Morris, 1988).

When classifications are studied or developed, an attempt is made to identify criteria whereby entities (eg. disorders) can be sorted, separated and identified. Classification research facilitates not only treatment etiology, but also communication and prediction (Blashfield and Draguns, 1976). The development of any classification is a dynamic, continuous process that may change depending on the purpose of the classification, or as newer discoveries are made.



Several framework for structuring psychopathology have been formulated in recent years and they are not mutually exclusive. From a design viewpoint, they can be described as having vertical, horizontal or circular structures (Millon, 1991). The vertical, refer to as the *hierarchical* framework, organises the various taxa of psychopathology (eg. depressive disorder or schizophrenic disorder) in a series of echelons in which lower tiers are subsumed as subsets of those assigned higher ranks (Millon, 1991).

The horizontal framework is known as the *multiaxial* schema; it orders different classes of attributes (eg. symptoms or etiologies) in a series of aligned or parallel categories. The DSM–IV (APA, 1994) encompasses both hierarchical and multiaxial structural forms. The circular framework is referred to as the *circumplex* model that is concerned with the ordering of interpersonal traits (Benjamin, cited in Millon, 1991), most notably in conjunction with personality processes and disorders (Fletcher, Morris and Francis, 1991). Theoretically, the purposes of a diagnostic classification system include the description of a disorder which facilitates communication among professionals by enhancing our understanding of, and ability to intervene with, a particular clinical phenomenon (Adams and Haber, in Schaughency and Rothlind, 1991).

The classification of attention disorders and related disorders of behaviour and learning (that is, attention deficit hyperactivity disorder, oppositional defiant disorder and learning disability) can be conceptualised from a number of perspectives. First there are traditional clinical perspectives that are usually categorical in nature and attempt to specify a set of core symptoms that are usually sufficient, but not necessary, for defining membership in a classification

(Fletcher et al, 1991). A second approach is derived from quantitative research and reflects a more general attempt to classify "*behaviour problems*" in children. Such classifications are usually based on a set of *core dimensions* that are generally present in all children, with statistically based cutting scores used to identify children with different disorders (Shaywitz and Shaywitz, 1992).

Whereas clinically derived classifications tend to identify many disorders, quantitative classifications tend to focus on the fewest possible reliable dimensions and, consequently, identify fewer disorders. For both clinically derived and quantitative classifications of attention related disorders, the crux of the problem is how to disentangle the disorder of interest from other, overlapping disorders. The critical question is whether these are quasi-independent disorders that are co-morbid, or simply represent phenotypic manifestations of the same underlying disorder (Fletcher et al, 1991). When the literature on the classification of ADHD is reviewed (Shaywitz and Shaywitz, 1988), there is a continued emphasis on categorical versus dimensional classifications, which often amounts to simple contrasts of clinically oriented versus quantitatively oriented approaches.

The classification of children with ADHD is intrinsically related to classification efforts for children with other presumed learning and behavioural disorders. Such classifications are important because they permit development of operationalised definitions of these overlapping childhood conditions. Classifications evolve and improve as new understandings are developed (Fletcher et al, 1991).

If research on childhood neurobehavioural disorders were better conceptualised from a classification perspective, our understanding of these would be enhanced. It is clear that theory and classification is

inextricably interlinked (Morey, 1991). As Skinner (1981 : 69) stated “**a central tenet is that a psychiatric classification should be viewed as a scientific theory that is open to empirical falsification**” .

2.7

### **SUMMARY**

Although ADHD is a common phenomena, the concept remains complex, multifaceted and difficult to understand. Possibly, because as Serfontein (1990) states these children have what is known as a “*hidden handicap*”. Therefore, this concept is rejected by some educational and medical professionals. For most of these people, these are not handicapped but rather normal children who are not being appropriately taught, managed or disciplined. Further, despite advances in establishing diagnostic criteria, a problem encountered in trying to contrast children diagnosed as having ADHD with children diagnosed with other behavioural or psychiatric disorders is the lack of agreed methodology, for operationalising these criteria (Riccio and Hynd, 1996).

Although research has documented the occurrence of ADHD as a singular disorder in some children and adults (Barkley, 1990), the population identified as ADHD has been found to be heterogeneous with many children exhibiting co-existing disorders (learning disability, specific language impairment) (Cantwell and Baker, 1991). The likelihood of a co-existing disorder with ADHD is sufficiently high, therefore a comprehensive assessment from a variety of perspectives would seem appropriate. However, in the present study the ability of educators in identifying diagnostic criteria for ADHD was assessed. Furthermore, the role of the following two factors was investigated : Knowledge of ADHD and qualification level. It was hypothesized that these factors might enhance the accuracy of educators’ *‘diagnostic*

*ability*'. Management techniques and favoured intervention strategies (some controversial, for instance, medical management of ADHD) employed by educators in the classroom was also explored.

Chapter Two provided the context for this study, the next chapter will describe the research design, procedure, sampling technique and measures used in the study.

## CHAPTER THREE

### METHODOLOGY

#### 3.1 RESEARCH DESIGN

The purpose of this study was to determine the extent to which Foundation Phase (Junior Primary) educators were able to identify behavioural descriptors of ADHD as outlined in the DSM–IV. The research also set out to investigate the role these factors, knowledge of ADHD and qualification level, play in increasing the accuracy of educators' rating of behavioural criteria pertaining to ADHD. Furthermore, management techniques and / or intervention strategies advocated by or employed by educators in the classroom context to deal with ADHD learners, were explored.

This study was based in Kwa-Zulu Natal, more specifically, a circuit in the South Durban region. The sample was randomly selected within a cluster sampling of primary schools in the Chatsworth East circuit. This particular circuit was selected on the basis of accessibility, time constraints, expense and convenience. From a total of 73 primary schools, 10% of this yielded 7 clusters of schools that were chosen randomly (i.e. every tenth school according to alphabetical order). Randomisation is a way of ensuring representivity, as this circuit contained ex–department of education schools (viz. Model C and House of Delegate [HOD]). The sample size was 44 and consisted of the complement of Junior Primary educators in the participating schools.

## 3.2 MEASURING INSTRUMENT

### 3.2.1 QUESTIONNAIRE

From a review of the literature, the researcher did not find a suitable instrument that would measure the key issues pertinent to this study, therefore, a questionnaire was constructed. However, some of the questions that were included were based on items used by Eloff and Pieterse's (1999) study of teachers' identification and intervention of ADHD in a Traditionally Black School in South Africa. Furthermore, the Browns' School Attention Deficit Hyperactivity Disorder Behaviour Rating Scale (DSM-IV) developed by Cunard (1995) was incorporated to determine educators' diagnostic ability. This was one of the key questions of this study. Face validity was obtained via reading of the questionnaire by two professionals with an interest and experience in the field of ADHD. Suggestions were given with regard to the framing of open-ended questions. These were taken into consideration in the final revised draft (refer to Appendix 2).

A pilot study was conducted. The questionnaire (refer to Appendix 2) was administered to two Junior Primary educators within the same circuit but from two different non-participating schools. This proved to be a fruitful exercise in clarifying and amending ambiguities in the questionnaire. The following were some of the changes effected:

- Questions 18 and 19 had to be included because educators' confused defining the term ADHD with the subtypes
- Question 29 had to be worded more specifically. Educators found the word 'handle' problematic.
- Questions 34 and 35 were included to gain clarity on which specific aspect of ADHD educators required in-service training.

Educators did not have any difficulty in completing the ADHD (DSM IV) Rating Scale. The final draft consists of all the revisions made.

### 3.2.2 DETAILS OF THE QUESTIONNAIRE

In Section A (refer to Appendix 2), the following demographic details was asked of respondents:

- name of school
- gender
- age range
- population group
- highest qualification level
- teaching experience (total and in the Junior Primary Phase)
- number of learners in class (boys, girls, total)

Section B consisted of, open-ended and close-ended questions. The section focused on educators' perception and categorisation of learner behaviour. This was to determine whether they approached ADHD from a categorical (clinical perspective / disease model) or a dimensional paradigm (behavioural problems as being quantitative deviations from "normality"). Shaywitz and Shaywitz (1991) state that considerable controversy exists over which system (categorical / dimensional) is most appropriate in the definitions of attention and related disorders. Therefore questions 17, 18 and 19 required respondents to explain ADHD and specify the different types.

The questions (21, 22, and 23) (Refer to Appendix2) aimed to determine whether educators were familiar with the DSM and thereby informed by the medical model; and to gage if educators

had completed a Conners' Rating Scale and understood what it measured. With the dimensional paradigm, rating scales, test scores and inventories are used to quantify individual differences along particular dimensions.

Educators were also required to identify factors that cause ADHD and to list the main behaviour patterns indicative of ADHD. This was to measure knowledge and behavioural criteria educators used to identify ADHD that is one of the key questions in the study.

The Browns' School DSM-IV ADHD Rating Scale was incorporated in Section C in the form of a Likert Scale. Educators had to rate each of the 31 statements, as follows: strongly agree, agree, not sure, disagree, strongly disagree. This addressed the primary concern of the present study, that is, the extent to which educators were able to identify behavioural criteria related to ADHD. The scale includes the subtypes of ADHD, as well as co-existing disorders / conditions. For as Morris and Fletcher (1988) state, the classification of childhood disorders of attention, learning and behaviour will be enhanced by polythetic classifications based on hierarchical models in which children are placed in groups, according to a set of identifying characteristics on which members may overlap on a single attribute, but differ in specific profiles. In addition, accurate diagnosis determines overall management of ADHD (Pfiffner and Barkley, cited in McBurnett et al, 1993).

Section D focused on the teaching strategies / management techniques employed by educators to accommodate ADHD learners in the classroom. The preferred method of treatment of



ADHD children was also queried, to assess whether the medical approach was favoured / advocated by educators. For Barkley (1990) states, that the single most important ingredient in an ADHD child's success at school is the teacher.

Two close – ended questions were included requiring opinions on the following :

- whether children outgrew ADHD as they reached adolescence / adulthood.
- educators to indicate whether they wanted in–service training on :
  - i) diagnosing ADHD
  - ii) management strategies than can be adopted in the classroom.

### 3.3 **CONCLUSION**

It was anticipated that the questionnaire would inform the critical questions of the study. The purpose of this study was to determine the diagnostic ability of educators in terms of their ability to identify behavioural descriptors of ADHD as evidenced in DSM–IV.

The critical questions of this research were :

- i) To determine the extent to which educators were able to identify behavioural criteria pertaining to attention related problems as ADHD as outlined in the DSM-IV.
- ii) In what ways were these attention related problems addressed in the classroom context (in terms of intervention strategies / management techniques).

- iii) Did knowledge of ADHD, and qualification level enhance educators' ability to identify attention related problems in the classroom and ensure effective management.

An in-depth discussion of the research methodology and questionnaire was the focus of this chapter. Chapter Four will look at the method of data collection and analysis of data.

## **CHAPTER FOUR**

### **METHOD OF DATA COLLECTION AND ANALYSIS OF DATA**

#### **4.1 METHOD OF DATA COLLECTION**

A covering letter was faxed to each selected school (refer to Appendix 1) requesting permission to conduct research and outlining the area of interest to be studied. Thereafter, telephonic contact was made with principals, who then referred the researcher to the Head of Department (H.O.D) of the Junior Primary Phase. Arrangements were made with the H.O.D.s of the participating schools to distribute the questionnaire to all educators in their department (Junior Primary) and to collect them after a given time period (2 to 3 days). The researcher delivered a set of questionnaires (depending on the number of educators in the Junior Primary Phase) to each participating school and collected them on the agreed upon day. One of the limitations is that the researcher had no control over how educators filled in the instruments. For instance, their responses may not be a true reflection of their knowledge of ADHD and ability to identify criteria. Educators could have consulted references and discussed with professionals and other educators before completing the questionnaire. This would have influenced their responses and made them appear more competent in their assessment and knowledge of ADHD than they actually are. This compromises the generalisability of the results.

#### 4.2 **PURPOSE OF THE STUDY**

To determine whether educators were able to identify behavioural descriptors pertaining to attention related problems as ADHD (as outlined in the DSM-IV).

The objectives of the study therefore were to :

1. Determine the extent to which educators were able to classify / categorise behavioural criteria pertaining to attention related problems as ADHD.
2. Explore the ways in which educators addressed attention related problems in the classroom.
3. Contribute to the existing body of literature pertaining to the assessment and management of ADHD by educators in the school context.

#### 4.3 **QUESTIONNAIRE RETURN RATE**

The seven randomly selected Primary Schools selected to participate in the study, yielded a sample size of 42 Junior Primary educators. One school did not participate as it was hosting a major event and teachers were involved with preparations. Hence, the total number of returns obtained was 36, the percentage of the return rate being 86%. Although, this response rate can be considered good, the 6 non-returns comprising 14% of the total sample is a significant percentage considering Schaefer's comment (in Margalit and Almougy, 1991) that teacher evaluations can provide comprehensive information about the student's functioning in the school environment, reflecting areas of cognitive competence, emotional adjustment, learning and behaviour style and / or problems.

Further, the schools selected were only representative of two of the four types of ex-department of education schools, namely ex Model C and ex HOD schools. Therefore, care must be taken with regard to generalisability of results considering this limitation of research bias.

#### **4.4 ANALYSIS OF DATA**

Leedy (1997) states that survey research ultimately aims to solve problems through the interpretation of the data that have been gathered. The data obtained for this study was analysed using a descriptive statistical method.

#### **4.5 DEMOGRAPHIC DETAILS OF EDUCATORS**

Frequencies were calculated for the total sample for all the questions (1 to 11) in the biographical details section (refer to Appendix 2) and are reported as valid percentages.

Analysis of the data obtained yielded the following :

- type of school : 55% were ex Model C and 43% ex HOD.
- race and gender : 58% of the participants were Whites and 42% Indians. All the respondents were females.
- the age range with the highest percentage of educators was the 31 – 40 years age group with 33%; the 20 – 30 years and 41 – 50 years age group had 27% each respectively; while the lowest rate of 15% fell in the 50 – 60 years age group.
- the highest qualification level obtained was a Diploma (in teaching – 41%); HDE (32%); Degree (18%) and post-graduate studies (B.Ed) comprised of 9%.
- Junior Primary Phase teaching experience : 42% indicated 0 – 10 years; 32% said 11 – 20 years, and 24%, 21 – 30 years.

- Total number of years of teaching experience : 29% indicated that they had 1 – 10 years experience; another 29% fell in the 11 – 20 year group and a further 29% cited their total teaching experience to be in the 21 years and above category.
- the total number of learners in the class ranged from 24 to 49 in a class with boys outnumbering girls.

The focus of the next section of the questionnaire (refer to Appendix 2) was twofold. First, it attempted to elicit information pertaining to behaviour problems educators experienced in the classroom and second, assess educators' knowledge of ADHD. Table 4.6.1 lists the common behaviour problems educators identified in the classroom.

#### 4.6 KNOWLEDGE OF ADHD

TABLE 4.6.1 COMMON BEHAVIOUR PROBLEMS IN THE CLASSROOM.

<b>Q12</b>	<b>Frequency</b>	<b>Percent</b>
Disruptive	27	79%
Restless/Fidgety	23	68%
Incessant Talking	17	50%
Poor attention & concentration	34	100%
Poor listening skills	14	41%
Defiance/Oppositional behaviour	11	32%
Teasing/Fighting/Arguing with peers	17	50%
Impulsivity	3	9%
Talkative	5	15%
Disturbing others	5	15%
Hyperactivity	2	6%

For Question 12 (in Appendix 2) educators had to list the 5 most common behaviour problems encountered in the classroom. On the

basis of the highest frequencies and percentages cited for the various behavioural problems, the following response patterns emerged :

- 100% cited poor attention and concentration
- 79% indicated disruptive behaviour
- 68% said restlessness and fidgetiness
- 50% reflected incessant talking as well as teasing / fighting / arguing with peers.
- 32% felt defiance / oppositional behaviours and
- 41% stated poor listening skills

It is interesting to note that only 6% rated hyperactivity as a behavioural problem.

Some of the behaviour problems stated by educators are the core descriptors of ADHD. Among the most common behaviour disorders of children are problems related to aggression, hyperactivity and inattention (Beare, 1991; Day, Bream and Pal, 1992; Goodyear and Hynd, 1992). At least one child in every classroom can be expected to demonstrate attention deficit disorder with hyperactivity (Rosenberg, Wilson, Maheady and Sindelar, 1992).

The amount of time educators indicated they spent on discipline issues in the classroom ranged from 10 minutes to 2 hours. In addition, 69% of respondents stated that they spent more time on disciplinary and misconduct problems compared to 31% who responded negatively. It appears that the majority of educators are of the opinion that addressing behaviour problems in the classroom context is time consuming and disrupts the academic programme.

Table 4.6.2 indicates educators' classification of the behavioural descriptors presented in Question 15.

TABLE 4.6.2

**CLASSIFICATION OF BEHAVIOUR**

<b>Q15</b>	<b>Frequency</b>	<b>Percent</b>
ADHD	8	24%
Disruptive	1	3%
Immaturity	4	12%
ADDH	1	3%
Inattentive	5	15%
Emotional Difficulty	2	6%
OT Problem	2	6%
Learning Disability	4	12%
ADD	3	9%
Hyperactive	6	18%
Ill-disciplined	3	9%
Limited attention span	1	3%

Educators were asked to categorise the list of behaviours presented. Twenty four percent correctly classified the behavioural symptoms as ADHD; 12% thought it was immaturity; 15% said inattentiveness; 12% indicated that it was a learning disability and 18% were of the opinion that the child was hyperactive.

ADD has emerged in recent years as a major concern of educators. One of the most significant conditions affecting children in schools, ADD until recently has been viewed as a learning disability (Essex and Schifani, 1992). Hence, it is interesting to note that 12% of the educators classified the behavioural descriptors as a learning disability.

McKinney and Forman's (cited in Margalit and Almougy, 1991) study tried to determine whether teachers could differentiate between



students with learning disabilities, educable mental handicaps and emotional disorders. They found that students with learning disabilities and children with emotional difficulties revealed similar patterns of behaviour, yet teachers reported that the students with emotional difficulties demonstrated more hostility and less consideration than the other group.

According to Murphy and Hicks–Stewart (1991), learning disability and ADHD are heterogeneous, overlap frequently, and correlate with a number of other disorders. However, the most significant problem is that the needs of the children in the classroom are not accurately described by these labels (Silver, 1990).

Table 4.6.3 reflects the definitions provided by educators for the term ADHD.

**TABLE 4.6.3 DEFINING ADHD**

<b>Q17</b>	<b>Frequency</b>	<b>Percent</b>
Poor attention and concentration	33	97%
Hyperactivity behaviour	23	68%
Difficulty maintaining focus	2	6%
Disruptive	3	9%
Attention seeking behaviour	1	3%
Chemical imbalance in brain	5	15%

For Question 17 educators were asked to explain what they understood by the term ADHD. Ninety-seven percent of the participants stated that it was related to poor attention and concentration; 68% said it was hyperactive behaviour; while 15% defined the concept as a chemical imbalance and 9% said it was being disruptive.

Following on from this, Question 18 required educators to indicate whether they were aware of the different subtypes of ADHD; 39% answered in the positive while 61% were negative.

Table 4.6.4 lists the subtypes identified by educators.

TABLE 4.6.4 **SUBTYPES OF ADHD**

<b>Q19</b>	<b>Frequency</b>	<b>Percent</b>
Hyperactivity	4	12%
Hypoactivity	3	9%
ADD	3	9%
ADD without Hyperactivity	2	6%
ADD / HD without SLD	1	3%
ADHD with Conduct Disorder	1	3%
ADHD with SLD	1	3%
Conduct Disorder	1	3%
Oppositional Defiant Disorder	1	3%

Educators provided the following responses with regard to the distinction of the subtypes of ADHD. Twelve percent stated hyperactivity only; 9% said hypoactivity; another 9% ADD, and 6% listed ADD without Hyperactivity (this shows familiarity with the DSM–III–R categorisation).

A further 3% listed the subtypes as follows : ADD/HD without SLD, ADHD with Conduct Disorder, ADHD with SLD, Conduct Disorder and Oppositional Defiant Disorder. From these responses, it is apparent that there exists confusion and misperceptions among educators

concerning the subtypes of ADHD. It appears that co-existing conditions / difficulties are regarded as subtypes of ADHD.

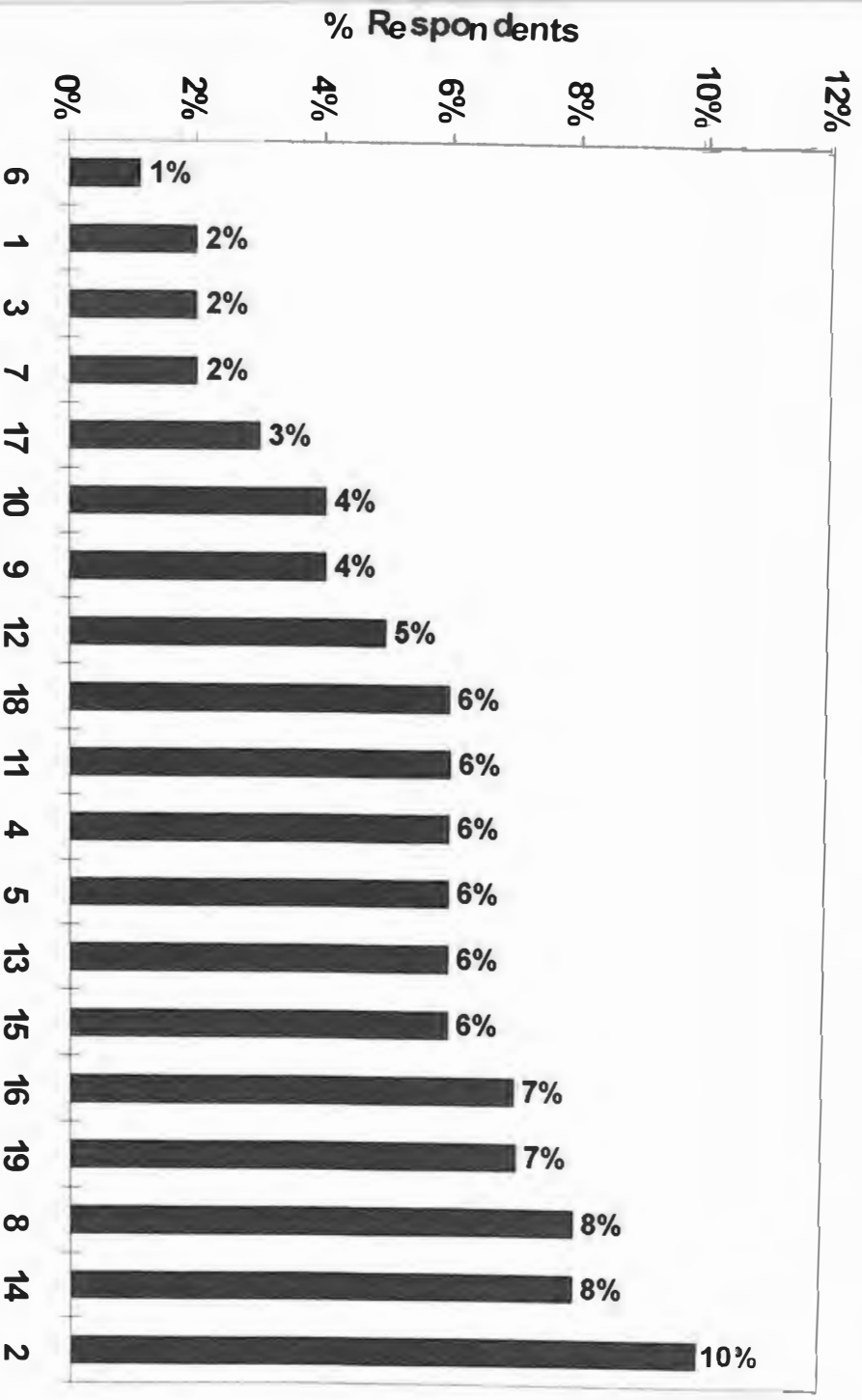
Question 20 explored the source of educators' information on ADHD. Forty-two percent indicated they had received undergraduate training; 25% stated that they had attended a workshop / symposia and 36% reflected other which was specified as follows : Nine percent cited school staff (H.O.D. / Principal) addressing them about ADHD at a staff meeting; 21% indicated that they were informed by literature / reading material (for eg. articles, magazines, books, newspaper); 3% stated their personal / teaching experience enhanced their understanding of ADHD; another 3% had attended a talk by a paediatrician.

Only 10% of the educators indicated for Question 21, which tried to determine which framework (categorical / dimensional) informed their perception of ADHD, that they were familiar with the Diagnostic and Statistical Manual of Mental Disorders. In addition, 45% of the respondents stated they had completed the Conner's Rating Scale. According to the theoretical framework employed, attention disorders can be conceptualised from either a traditional clinical perspective which is categorical in nature, where disorders are viewed as discrete disease entities (Shaywitz and Shaywitz, 1988) or from a dimensional paradigm which conceptualises neurobehavioural problems in terms of a quantitative deviation from "*normality*". Rating scales, test scores and inventories are used to quantify individual differences (Morris and Fletcher, 1988).

Graph 1 reflects the etiological factors educators indicated were causal attributes of ADHD.

**GRAPH 1**

**ETIOLOGY OF ADHD**



**KEY TO GRAPH**

1	Allergies
2	Colourants / Preservatives
3	Premature Birth
4	Developmental Lag
5	Poor Parenting
6	Lead Poisoning
7	Low Socio - Economic Status
8	High Sugar Diet
9	Malnutrition
10	Epilepsy
11	Head Injuries
12	Depression
13	Negative Attention Seeking
14	Hereditary Factors
15	Inconsistent Disciplines
16	Emotional Deprivation
17	Modelling Parents' Behaviour
18	Broken Homes
19	Lack of Routine / Structure (Home / School)

The following response patterns emerged with regard to etiological factors of ADHD :

- 10 % cited colourants / preservatives
- 8% indicated a high sugar diet and hereditary factors
- 7% attributed lack of routine/structure (home/school) and emotional deprivation as etiological factors
- 6% thought that developmental lag, poor parenting, negative attention seeking behaviour, inconsistent discipline, head injuries and broken homes were causal factors
- 5% cited depression whilst 4% thought it was malnutrition and / or epilepsy
- 3% indicated modeling parent's behaviour
- 2% stated premature birth, low socio-economic status and allergies caused ADHD
- 1% cited lead poisoning

Educators' opinions on causal attributes of ADHD inevitably influences their management / intervention strategies in the classroom. It also taps into their knowledge base pertaining to the causes of neurobehavioural problems in children.

Table 4.6.5 highlights other etiological factors that educators considered as additional causal attributes of ADHD.

TABLE 4.6.5 **OTHER ETIOLOGICAL FACTORS CITED BY EDUCATORS**

<b>Q25</b>	<b>Frequency</b>	<b>Percent</b>
Chemical imbalance	8	24%
Emotional problems	1	3%
Cortical immaturity	1	3%
Auditory problems	1	3%
Perceptual problems	1	3%
Low socio-economic conditions	3	9%

Although 24% of educators specified chemical imbalance as an etiological variable, only 6% advocated medical attention as a form of treatment for ADHD (refer to Table 4.8.4). Three percent cited the following as additional causes : emotional problems, cortical immaturity, auditory and perceptual problems. A further 9% stated low socio-economic status played a causal role.

In Table 4.6.6, the main behaviour patterns of ADHD as identified by educators are listed.

