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1.1 OVERVIEW

Attention Deficit Hyperactivity Disorder (ADHD) is a condition wherein it is hard for children to control their behavior and/or pay attention and have problems of attention and of hyperactivity and impulsivity that are more acute and recurrent than those of typical children of the same developmental level. This disorder occurs in some children in the preschool and early school years. Today their diagnosis has increased so much that it is now one of the most commonly diagnosed disorders of childhood. It is estimated that nearly three to five percent of children have ADHD (Cohen, Becker, & Campbell 1990), and it has the potential to impact almost every classroom.

The key question, that is trying to be answered, is what is the most suitable treatment for ADHD? Unfortunately, an answer has not been found yet.

For decades, medication has helped to treat and reduce the symptoms of ADHD. Though drug treatment seems to offer a quick fix it is only a short-term limited solution to a complex multifaceted problem. Medication only covers some symptoms and does not actually get to the root of the problem. After the drug is discontinued the symptoms tend to reappear. Drug therapy is
effective over prolonged use however, this comes with its share of side affects. Hence, most parents of children with ADHD are dissatisfied with the existing treatment options and are on the look out for suitable alternatives. There has been an incessant search for progressively more effective remedies for physical and psychological ailments and the world of remedies is seeking reprieve in alternative systems of therapy. The present study, therefore, is an attempt to explore the efficacy of Music and Dance as therapy in intervention for children with ADHD.

This chapter elaborates on ADHD, it describes its symptomatology, etiology other disorders that accompany ADHD and the existing treatments. The intervention methods employed in the study are also outlined in brief. The discussion is ensued by the statement of the problem, the significance of the present research and the hypotheses which have been derived from the objectives of the study.

1.2 CONCEPTS

In this section we will take a look at the various concepts included in the study.

1.2.1 Attention Deficit Hyperactivity Disorder (ADHD)

In 1845, Hoffman, a physician who wrote books on medicine and psychiatry first described the symptoms of ADHD. Being unable to find suitable reading material for his 3 year old son, he began writing for children.
The result was a book of poems, complete with illustrations, about children and their characteristics. The story "Struwwel-Peter" was an accurate description of a little boy who had attention deficit hyperactivity disorder (Thome et al., 2004).

In 1902, Still published a series of lectures given to the Royal College of Physicians in England in which he described a group of impulsive children with significant behavioral problems, caused by a genetic dysfunction and not by poor child rearing—children who today would be easily recognized as having ADHD. Since then, several thousand scientific papers on the disorder have been published, providing information on its nature, course, causes, impairments, and treatments (National Institute of Mental Health, 2006).

i. Definition

The principal characteristics of ADHD are inattention, hyperactivity and impulsivity. Symptoms of ADHD will appear over the course of many months, often with the symptoms of impulsiveness and hyperactivity preceding those of inattention, which may not emerge for a year or more. Different symptoms may appear in different settings. According to the Diagnostic and Statistical Manual –IV there are three patterns of behavior that indicate ADHD. They are: Hyperactive-Impulsive Type (these do not show significant inattention). Inattentive type (these do not show significant
Hyperactivity and impulsivity) Combined Type (these exhibit symptoms of both hyperactivity and inattention).

ii. Symptoms

Following are some of the symptoms of ADHD:

- Appears to be in constant motion
- Often fidgets with hands or feet
- Finds nearby objects to play with or put in mouth
- Difficulty remaining in seat/roams around room
- Impulsivity and lack of self-control
- Blurts out verbally
- Can’t wait for his or her turn
- Often interrupts or intrudes on others
- Often talks excessively
- Gets in trouble because he/she doesn’t stop and think
- Often engages in physically dangerous activity without considering the consequences
- Difficulty with transitions/changing activities
- Aggressive behavior, easily over-stimulated
- Socially immature
- Low self esteem and high frustration
- Attention Deficit
- Easily distracted by extraneous stimuli
• Difficulty listening and following directions
• Difficulty focusing and sustaining attention
• Difficulty concentrating and attending to tasks
• Inconsistent performance in school work-one day the student is able to do the task and the next day he is not; the student is “consistently inconsistent”
• Tunes out -may appear “spacey”
• Disorganized-loses and can’t find belongings (papers, pencils, books); desks and rooms may be a total disaster area
• Poor study skills
• Difficulty working independently

Where six or more of these apply for a duration of six months or more, ADHD is likely to be present (APA, DSM IV, 1994). DSM IV allows adult diagnosis as long as the following associative characteristics are met: Symptoms must occur in at least two of the following settings; home, school or work. Clear evidence of interference with social, academic or occupational functioning must be observed (Davison & Neale, 1998). A major DSM-IV requirement for this disorder is that at least some hyperactivity or inattentive symptoms should be observed by the age of 7, even if diagnosis is made much later (Sarason & Sarason, 2000). Disturbances cannot occur under any other mental disorder; ADHD must be diagnosed separately.
iii. Associated Factors

Children with ADHD, often have behavioral, cognitive, affective and social impairments that are distinct from the core symptoms of inattention, hyperactivity and impulsivity. A brief look into these problems follows:

**Behavioral**

Children with ADHD lack persistence, they often have problems with delayed gratification and do not persist if gratification is not immediate. These children show very variable performance on academic or other tasks, which in turn lead to frustration and a fragile sense of self.

**Cognitive**

Children with ADHD have a problem with time dependent test and task which stem from their impaired sense of time. This results in problems with planning, waiting and playing. Short-term memory is also affected.

**Emotional**

ADHD causes temper outbursts, mood lability and reactivity, which often are isolated from the environment.

**Social**

Children with ADHD often have problems reading social cues, they are bossy, intrusive and insensitive to the needs of others. They have
problems cooperating, respecting social hierarchies and following rules. They often experience rejection, teasing and become verbally and physically abusive (Kaplan & Saddock, 2005).

iv. Etiology

The etiology of ADHD has not definitively been ascertained. However, there is a growing consensus that the condition has neurological underpinnings. The symptoms of ADHD are not unidimensional and therefore involve various interrelated neuroanatomical and neurochemical systems. Thus, it is unlikely that one brain area or one neurochemical system will emerge as the sole or primary cause of any particular symptom or group of symptoms (Kaplan & Saddock, 2005).

Genetics

Family genetic studies including twin, sibling, adoption and family studies suggest genetic factors play an important role in ADHD. Twin studies show what monozygotic twins are much more concordant for ADHD symptoms than same sex dizygotic twins. Sibling studies show that full siblings are more concordant for ADHD than half-siblings. Adoption studies have shown that biological relatives of ADHD children are more likely to have ADHD or associated disorders. Family studies reflect a higher rate of the disorder in families of probands versus families of control or comparison subjects. The strong evidences of genetic influences in ADHD have resulted
in various attempts to identify the specific genes and their abnormalities that may be implicated in ADHD. Most of the studies have focused on dopamine-related genes. Positive associations have been made with DAT1 and DRD4-7. However, much more work needs to be done in this area to ascertain the exact gene and how it works. For, as much evidence supports these findings there is evidence to the contrary (Kaplan & Saddock, 2005).

**Neuroanatomy**

Comprehensive reviews of neuroimaging studies in ADHD involving CT scans, MRI’s, fMRI’s, PET scans, glucose metabolism, regional cerebral blood flow and SPECT suggest decreased size and activity in the frontal lobes, particularly in the prefrontal area. These studies substantiate evidence of a small corpus callosum and cerebellum and decreased activities in the anterior cingulate. In the striatal areas and substriatal structures like the thalamus and hippocampus decreased activity has also been revealed. Smaller and less active globus pallidus and caudate nucleus has also been documented. Not surprisingly, children with ADHD tended to have overall smaller brains (Kaplan & Saddock, 2005).

*Neurotransmitters* are chemicals that are used to relay, amplify and modulate signals between a neuron and another cell (Wikipedia, 2007).

*Dopamine System* is very important in ADHD. The cortical-striatal-thalamic-cortical networks are known to be areas of dopamine concentration
and are also areas implicated in ADHD. Molecular genetic studies have suggested the involvement of dopamine receptor genes DRD4 and DRD2. Stimulant drugs which have been known to be effective with ADHD symptoms bind dopamine receptors and prevent the reuptake of dopamine into the presynaptic nuclei (Kaplan & Saddock, 2005).

**Noradrenergic System** Inattention, sleeping difficulties and some other cognitive deficits which may be the underlying cause in ADHD have been thought to be a result of the disruption of the normal inhibition locus ceruleus neurons which is caused by an imbalance in tonic epinephrine formation. Though there have been studies that suggest the noradrenergic system could play a role in ADHD, the evidence for involvement is less strong as compared to the dopamine system (Kaplan & Saddock, 2005).

**Serotonergic System** Some drugs that affect serotonin metabolism are moderately effective in ADHD, which prompted the serotonin hypotheses in ADHD. However, selective serotonin reuptake inhibitors have not been effective. Hence, even if there is an involvement of serotonin it is likely to be an adjunctive rather than a central role (Kaplan & Saddock, 2005).

**Nonspecific Catecholamine Hypothesis** suggests that ADHD can be best understood by the interaction between various neurotransmitters, particularly dopamine and norepinephrine (Kaplan & Saddock, 2005).
Other Neurotransmitters

Neurotransmitters like Gamma Aminobutyric acid (GABA), which is an inhibitory neurotransmitter in the Central Nervous System (CNS) and histamine, which acts centrally and peripherally have been implicated. However, there is little evidence that substantiates this (Kaplan & Saddock, 2005).

Environmental Factors

High lead exposure, pregnancy and delivery complications and maternal smoking during pregnancy have been implicated in increased rates of ADHD. Currently it is difficult to determine whether the symptoms reflect chronic expressions of underlying anxiety or depression, a problem with parenting or socialization, a genetically influenced biological problem or some interaction of a number of factors (Kaplan & Saddock, 2005).

v. Comorbidity

More than 50% of the children diagnosed with ADHD are comorbid for another psychiatric condition, these rates increase with age (Kaplan & Saddock, 2005). Therefore it is of utmost importance to address the issue to comorbidity.

Learning Disabilities

Many children with ADHD—approximately 20 to 30 percent—also have a specific learning disability (LD) (Wender, 2002, cited in NIMH 2006).
These ineptitudes include convolution in understanding certain sounds or words and/or difficulty in expressing oneself in words, reading or spelling disabilities, writing disorders, and arithmetic disorders.

Tourette Syndrome

A very tiny fraction of people with ADHD have a neurological disorder called Tourette syndrome. People with Tourette syndrome have diverse nervous tics and repetitive mannerisms, such as eye blinks, facial twitches, or grimacing. Others may clear their throats recurrently, snort, sniff, or bark out words. While a small number of children have this syndrome, many of the cases of Tourette syndrome have associated ADHD.

Oppositional Defiant Disorder

As many as one-third to one-half of all children with ADHD—mostly boys—have oppositional defiant disorder (ODD) (NIMH, 2006). Kaplan & Saddock report that ADHD and comorbid ODD coexist in 30 to 40% of ADHD patients. These children are often insolent, obstinate, non-compliant, have outbursts of temper, or become cantankerous. They argue with adults and refuse to obey.

Conduct Disorder

About 20 to 40 percent of ADHD children may in due course develop conduct disorder (CD), a more severe pattern of antisocial behavior. These children habitually lie or steal, fight with or bully others, and are at a
real risk of getting into trouble at school or with the police. They desecrate the basic rights of other people, are aggressive toward people and/or animals, obliterate property, break into people's homes, commit thefts, carry or use weapons, or engage in vandalism. These children or teens are at greater risk for substance use experimentation, and later dependence and abuse.

**Anxiety and Depression**

Some children with ADHD often have co-occurring anxiety or depression. If the anxiety or depression is recognized and treated, the child will be better able to handle the problems that accompany ADHD. Conversely, effective treatment of ADHD can have a positive impact on anxiety as the child is better able to master academic tasks (NIMH, 2006).

**Bipolar Disorder**

There are no precise statistics on how many children with ADHD also have bipolar disorder. Differentiating between ADHD and bipolar disorder in childhood can be difficult. In its classic form, bipolar disorder is characterized by mood cycling between periods of intense highs and lows. But in children, bipolar disorder often seems to be a rather chronic mood deregulation with a mixture of elation, depression, and irritability. Furthermore, there are some symptoms that can be present both in ADHD and bipolar disorder, such as a high level of energy and a reduced need for sleep. Of the symptoms differentiating children with ADHD from those with bipolar
disorder, elated mood and grandiosity of the bipolar child are distinguishing characteristics (Geller et al, 1998, cited in NIMH, 2006).

vi. Treatment

As of now, treatment includes medication and psycho-socio intervention.

Medication

Medication includes stimulant and non-stimulant drugs.

Stimulants

In 1937, C. Bradley reported the benefits of Benzedrine in improving behavior and school performance in institutionalized children. Since then, there have been numerous studies that have shown that stimulus medication like dextroamphetamine and methylphenidate reduce impulsivity and inattention, whereas school behavior and social and family functioning improves in 75% to 80% of the children with ADHD. Of the children who do not respond, 90% of them respond to a changed dosage or another stimulant (Kaplan & Saddock, 2005).

Methylphenidate and amphetamines increase the release of dopamine and norepinephrine from their storage site in nerve terminals and block their reuptake (by inhibition of dopamine transport protein). This
increases the availability of dopamine in the synaptic cleft (Kaplan & Saddock, 2005). Mott and Leach (2004) cite that The American Academy of Child and Adolescent Psychiatry (AACAP) supports the prescribing of methylphenidate in adolescents with ADHD. They suggest the lowest effective dose as studies indicate higher dosages do not improve performance in adolescents. However, the studies reviewed by them did not define long-term academic or vocational success (Mott & Leach, 2004).

**Efficacy** As reported earlier the efficacy rate is high, however, the placebo response rate ranges from 2% to 39%.

**Cognitive Effects** Stimulants improve cognition, vigilance, reaction time, short-term memory and learning of verbal and nonverbal material as well as improvement in academic functioning and school-based productivity in ADHD.

**Behavioral Effects** Stimulants improve impulsive behavior, noisiness, non-compliance, disruptiveness, mother-child interaction, peer perceptions of the child as well as the child’s self-perception in ADHD.

**Adverse Effects** Short term side effects include decreased appetite, weight loss, delayed onset of sleep, headaches, stomachaches, slight increase in pulse and blood pressure and some increased irritability and crying.

Infrequent side effects are motor tics, Tourette’s syndrome, and rebound, which is a deterioration that exceeds the baseline or placebo
conditions which occurs late afternoon or evening after daytime administration of the stimulant medication. Rebounds occur in up to 30% of the patients in some samples and the magnitude differs from day to day.

Choreiform movements and self-directed behavior like, lip licking, lip biting and light picking of fingers occasionally occurs as a result of stimulant medication.

At very high doses, rare effects like toxic psychosis with tactile delusions, thought disorganization, pressured speech and marked anxiety also occurs. Rare cases of bone marrow suppression and thrombocytopenia have also been associated with stimulant use. Because of reports of liver toxicity and liver failure resulting in death the use of Pemoline in ADHD has been discontinued.

Long Term Effects Stimulants have been thought to suppress the height and weight of children receiving them. The suppression is predominant in the first year of medication, which is followed by rebound growth, or habituation of this effect (Kaplan & Saddock, 2005).

Non Stimulant Medication

As some children to not respond to stimulants or may have prohibitive side effects other medication needs to be employed. However, these secondary drugs are less effective and have more side effects, although
rebounds or insomnia are not part of their side effect profile and they have longer duration of action.

*Atomoxetine HCl* is a norepinephrine reuptake inhibitor which has shown to be effective with regard to ADHD symptoms and behaviors. Common Side effects include abdominal discomfort, decreased appetite with resulting weight loss, dizziness, vertigo, irritability and mood swings, minor increases in heart rate and blood pressure have also been observed (Kaplan & Saddock, 2005). Henderson (2004) reported on a case of mania associated with atomoxetine administration although in controlled studies roughly 70 % of the subjects without comorbidity show a reduction in scores as measured by ADHD measures (Henderson, 2004).

*Tricyclic Antidepressants (TCA)* such as Imipramine, nortriptyline and amitriptyline have been found to be effective in ADHD in 29 studies reviewed by Spencer et al. (1998 cited in Kaplan & Saddock, 2005). The most frequent side effects are fatigue and sedation. Cholinergic side effects like, constipation, dry mouth or blurred vision also occurs. Cardiovascular side effects include the slowing of the cardiac conduction increasing the risk of cardiac arrhythmias and heart block.

*Bupropion* is a non-TCA anti-depressant that has shown some efficacy in ADHD but it is less effective than stimulants and TCA’s. Side effects include fatigue, dry mouth, insomnia, headaches, nausea, vomiting,
constipation, tremors and skin rashes. At high dosages seizures have been reported.

\textit{Alpha Adrenergic Antagonists} such as clonidine and guanfacine have been reported to be effective in children with ADHD. Though these medication decrease impulsivity and hyperactivity they show less impact on attention. Clonidine is very sedating and can have a minimal impact on blood pressure and postural hypotension. It needs to be discontinued very slowly to prevent rebound adrenergic overdrive, with hypertension, agitation, fever, headache, chest pain, sleep disturbance, nausea and vomiting. Potential cardiac effects and possible deaths from the combination of clonidine and stimulants have raised concerns. Guanfacine is slightly less sedating than clonidine, its side effect profile is otherwise similar to clonidine (Kaplan & Saddock, 2005).

\textbf{Psychosocial Treatment}

Psychosocial treatment refers to nonmedication treatment like psychoeducation, academic organization skills and remediation, parent training, behavior modification, cognitive-behavioral therapy, social skills training and family and individual therapy.

\textit{Psychoeducation}

Psychoeducation refers to educating the family and the child about ADHD, its possible etiology, presentation, treatments, side effects and
prognosis. It includes intervention in school designed to improve school behavior, academic productivity and achievement (Kaplan & Saddock, 2005). McLeary & Ridley (1999) evaluated a psychoeducation group of parents of adolescents with ADHD, they reported a statistically significant decrease in frequency and intensity of self-reported parent-adolescent conflict and in parent-reported problem behavior.

**Academic Organizational Skills and Remediation**

Approximately 20 to 25% of children with ADHD develop Learning Disabilities as a result most children with ADHD have academic problems. Hence, children with ADHD who are often far behind academically could benefit from remedial tutoring and academic organizational skills.

**Parent Training in Behavior Therapy**

Parents with children who have ADHD often are unable to manage effectively their wards behavior. Parent Training is an intervention that involves teaching the parents how to implement a contingency management behavioral program. Parents are provided an overview of social learning and behavior management principles and are taught strategies of behavioral management, such as identifying target behaviors, instituting a meaningful reward system, contingency attention, time-out and response cost (Kaplan & Saddock, 2005). In 2005, Ghamizadeh and Shahrivar studied the effect of Parent Management Training on children with ADHD, and found that Parent
Management Training improved the behavior and general mental health of the child. Having said so, Parent training has shown to be effective but not as effective as stimulant medication.

**Family Therapy**

Family conflict is frequently present in families with ADHD children which could be as a result of less effective family, coping styles, parental skills deficit or simply the stress of parenting a difficult child. Hence family therapy can help in decreasing conflict and stress in the family (Kaplan & Saddock, 2005).

**Cognitive-Behavioral Therapy**

This attempts to modify dysfunctional and maladaptive behavior via self-talk and self-regulation. A critical review by Abikoff et al. (1996) indicated that cognitive-behavioral therapy for children with ADHD is not very successful and is of little benefit once the program is discontinued. Hence more specific and direct behavioral interventions and social skills training are recommended in ADHD (Kaplan & Saddock, 2005).

**Social Skills Training**

One of the most disabling associated features of ADHD is poor social functioning and accompanying peer and adult rejection which significantly affects self-esteem. Social Skills Training (SST) combines both
cognitive-behavioral and behavioral interventions. Techniques such as modeling, didactic instruction, symbolic play with puppets, in vivo practicing role-play and behavioral rehearsal are used. Positive reinforcement, self-management and reinforced self-evaluation reduce negative social interaction and increase positive social behavior. SST is still evolving and needs to take into account the child’s age, gender settings and need to be more individualized (Kaplan & Saddock, 2005). Antshel & Remer (2003) evaluated efficacy of SST on children with 2 subtypes of ADHD. SST led to greater improvements in both parent- and child-perceived assertion skills in the children with ADHD, yet did not affect the other domains of social competence.

**Individual Psychotherapy**

This is unlikely to be effective for ADHD symptoms and there is no document study to show its impact. However, individual therapy can help the child understand what ADHD is and can deal with issues like self-esteem, it can explore the child’s feelings about stimulant medication and its side effects (Kaplan & Saddock, 2005).

**Electroencephalographic (EEG) biofeedback**

Over the past three decades, a series of case and controlled group studies examining the effects of EEG biofeedback have reported improved attention and behavioral control, increased cortical activation on quantitative
electroencephalographic examination, and gains on tests of intelligence and academic achievement in response to this type of treatment. In 2005, Monastra et al., critically reviewed empirical evidence regarding the efficacy of biofeedback, it was determined that EEG biofeedback is "probably efficacious" for the treatment of ADHD, as significant clinical improvement was reported in approximately 75% of the patients in each of the published research studies.

**Multimodal Treatment**

Multimodal treatment is the use of several treatments in conjunction with each other. Recent studies have shown that this is rather useful. Psychosocial treatments appear to be an important adjunct to medication treatment for children with ADHD. The Multimodal Treatment Study of Children with ADHD—"MTA" published in December 1999 by NIMH indicated that long-term combination treatments as well as medication-management alone were both significantly better than intensive behavioral treatments and routine community treatments in reducing ADHD symptoms. In other areas of functioning like anxiety symptoms, academic performance, oppositionality, parent-child relations, and social skills, the combined treatment approach was consistently superior to routine community care, whereas the single treatments (medication-only or behavioral treatment only) were not (NIMH, 2000).
However, there have not been enough documented studies with other treatments alone and hence medication is the most used method of treating ADHD symptoms.

1.2.2. Music Therapy

Music therapy is the prescribed use of music and musical interventions in order to restore, maintain, and improve emotional, physical, physiological, and spiritual health and well being. Within this definition are the key elements which define interventions as music therapy. Music is the primary therapeutic tool. Using music to establish a trusting relationship, the music therapist then works to improve the client's physical and mental functioning through carefully structured activities. Examples can include singing, listening, playing instruments, composition, moving to music, and music and imagery exercises (Kathysl, 1998).

Music Therapy is "the planned and creative use of music to attain and maintain health and well being. People of any age or ability may benefit from a music therapy programme regardless of musical skill or background. It may address physical, psychological, emotional, cognitive and social needs of individuals within a therapeutic relationship. It focuses on meeting therapeutic aims, which distinguishes it from musical entertainment or music education" (Australian Music Therapy Association Inc., 2007).
Music therapy is now an established healthcare profession that is used with individuals of all ages to address their psychological needs using music as a medium. The use of music tends to improve the quality of life for persons who are not ill as well as meets the needs of children and adults with disabilities or illnesses. Music therapy interventions can be used for a variety of psychological problems like stress management, sleep disorders, as well as the spectrum of childhood and adult disorders. Other than this it has also been beneficial with people who have difficulty expressing their emotions, for memory enhancement, communication improvement and in promoting physical rehabilitation (American Music therapy Assoc. 2007).

1.2.3 Dance Therapy

Dance/movement therapy is a creative arts therapy, rooted in the expressive nature of dance itself. Dance is the most fundamental of the arts, involving a direct expression and experience of oneself through the body. It is a basic form of authentic communication, and as such it is an especially effective medium for therapy. Based in the belief that the body, the mind and the spirit are interconnected The premise of Dance/Movement Therapy is that the movement of an individual reflects how he/ she thinks and feels, which becomes the gateway into the person’s mental state of being.

Dance/Movement Therapists work with a wide variety of clients of all ages, groups and families including people who are emotionally distressed, people with learning difficulties, those with physical or mental illness and
people who want to use the medium for personal growth. The therapist helps in improving self-esteem and body image, helps develop effective communication skills and relationships, expands the movement vocabulary, gain insight into patterns of behavior, as well as create new options for coping with problems for the individual. Movement is the primary medium dance/movement therapists use for observation, assessment, research, therapeutic interaction, and interventions. Dance/movement therapists work in settings that include psychiatric and rehabilitation facilities, schools, nursing homes, drug treatment centers, counseling centers, medical facilities, crisis centers, and wellness and alternative health care centers. Dance/movement therapy is a powerful tool for stress management and the prevention of physical and mental health problems. Dance/movement therapists integrate the dancer’s special knowledge of the body, movement, and expression with the skills of psychotherapy, counseling and rehabilitation to help the individual with a wide array of treatment needs. The fact that dance/movement therapists are immersed in the language of the body, rather than focusing solely on the verbal, lends characteristics to their work that set it apart from other types of therapy (Health Professions Network, 2005).

While the origins of dance as a healing art lie in ancient history, the contemporary profession incorporates dance, movement and psychological theories and therapeutic practices developed primarily in Europe and the U.S.A. The profession is also informed by continuing international research (The Association for Dance Movement Therapy, U.K, 2006).
1.3 PRESENT STUDY

The present study aimed at finding out the effect, if any, of music and dance on children with ADHD. The significance of the present study, its objectives and the statement of the problem are given below.

1.3.1 Statement of the Problem

The efficacy of Music and Dance in reducing symptoms of ADHD in children.

1.3.2 Significance of the Study

ADHD has been a disorder marked by contradictions, uncertainty, the unexpected and sometimes the bizarre (Goldstein & Naglieri, 2005). As a result it has become increasingly difficult to find a consensus on anything related to the disorder.

Studies however have shown that thus far the most effective treatment option for ADHD has been psychopharmacology, namely, stimulant drugs. But some argue that the drawbacks of these medicines far outweigh their benefits. Moreover, as discussed earlier many of the medicines do come with their share of debilitating side-effects. Hence, a need is felt by parents as well as mental health practitioners for alternative therapies that can be useful with children who have ADHD.
Music and movement have from long been known to have healing qualities. Many eastern religions use music and movement to calm the mind. Preschool and kindergarten teachers have also acknowledged that children learn better through song and action (Amen, 2005). Many clinicians and therapists who work with ADHD children have agreed that music does help the children. However, almost no studies on the effects of music and/or dance on ADHD have been documented.

These reasons strengthen the relevance and need of a study of this nature, which set out to find out the effect of music and dance on children with ADHD.

1.3.3 Objectives of the Study

The objectives of the present study were to find out the effect of:

1. Music on children with ADHD symptoms and
2. Dance on children with ADHD symptoms
3. A comparison between Music and Dance with regards to the effect they have on children with ADHD.

1.4 SUMMARY

This chapter began with an overview, which briefly capsuled the essence of the present study. It proceeded to describe the various concepts employed namely Attention Deficit Hyperactivity Disorder, its symptoms,
etiology, associated disorders and current treatments. Following this the two intervention methods employed in the study were defined. The chapter concluded with the description of the present study.