

CHAPTER - 2

REVIEW OF LITERATURE

ADHD is one of the most commonly diagnosed childhood psychiatric disorders. These symptoms can be severe enough and last long enough to significantly impair a person's daily life. Children with ADHD may be experiencing complex negative emotions stemming from their environment. They may suffer from depression and low self-esteem but may mask these feelings with aggression and denial. Youngsters most at risk for Oppositional Defiant and Conduct Disorders are those who have Attention Deficit Hyperactivity Disorder. Youngsters may also be at risk if they were rejected by their parents and not given good foster care.

Studies have been conducted to understand the phenomenon better so that the ill effects can be minimized. The following studies provide a partial basis for the present study and help to put our views into a proper perspective.

Kutcher, Aman, and Brooks (2004) studied clinical implications and treatment practice suggestion for ADHD children. They suggested first-line treatment for ADHD without co-morbidity is psycho stimulant medication aided by psychosocial intervention. For ADHD with co-morbid conduct disorder (CD), psychosocial intervention combined with pharmacotherapy is suggested. For primary CD, suggested first-line treatment is psychosocial intervention, with pharmacotherapy considered as an add-on when aggression/impulsivity is marked and persistent. Pharmacotherapy requires careful titration; full-day coverage is suggested goal. Regular long-term follow-up is recommended.

Treatment must therefore be long term. Optimal treatment is multimodal: pharmacotherapy is effective at alleviating “biological” symptoms such as inattention, hyperactivity, impulsivity and aggression; psychosocial intervention is needed to promote prosocial behavior.

Waschbush, Kipp, and Pelham (1997) reviewed assessment and treatment of attention-deficit/hyperactivity disorder (ADHD) to highlight the importance of examining individual differences in treatment response. This study highlights the need for systematic, comprehensive, individualized treatments for ADHD children. While a variety of research suggests that behavioral, medication, and their combination are most likely to produce positive changes in children with ADHD as a whole, there are large individual differences. As illustrated by the cases presented in this study, response to treatment may differ as a function of the domain, setting, and treatment intensity. In order to provide the effective treatment, it is important to assess treatment response objectively and comprehensively, taking these individual difference factors into account.

2.1. Emotional Problems Associated with ADHD

Slomkowski, Klein, and Mannuzza (1994) using a prospective design, examined (a) whether hyperactive children suffer from low self-esteem as adolescents; (b) whether low self-esteem is associated with poor functioning in adolescence; (c) whether hyperactive children exhibit a positive illusory bias, in which self-esteem is independent of level of functioning; and (d) whether self-esteem in adolescence is associated with poor functioning in adulthood. Subjects were 65 children diagnosed as hyperactive in childhood, and 62 matched controls

sampled from a medical clinic. After controlling for current mental disorder, the hyperactive cohort reported lower self-esteem in adolescence, was judged by clinicians to have lower levels of overall adjustment in adolescence, and had lower educational achievement and occupational rank in adulthood, as compared to controls.

Ostrander, Crystal, and August (2006) designed a study to test either the relationship between ADHD and depression may result from the social/interpersonal difficulties that many children with ADHD experience or not. Of the 148 children with ADHD, 60 also met criteria for either Oppositional Defiant Disorder (ODD) or Conduct Disorder (CD) while 88 did not. In both younger and older children, depressive symptoms were significantly higher among children with ADHD; this was true regardless of whether ODD or CD was also present. The magnitude of the differences would be considered relatively large. Among older children, depressive symptoms were highest when ODD or CD co-occurred with ADHD. At both younger and older ages, children with ADHD were viewed as having significantly lower levels of social competence by their parents and teacher.

These studies highlight the presence of substantial levels of the emotional problems in ADHD children, particularly in older children. Further research is found necessary to understand what type of therapy are effective in reducing emotional problem and enhancing mental health of ADHD children.

Taylor, Chadwick, Heptinstall and Danckaerts (1996) found that children with ADHD or conduct disorder had more negative emotions - aggressiveness,

tension and feelings of being exploited, unlucky or poorly treated - and lower constraints - a tendency to break rules and engage in thrill-seeking behavior - than children with neither of the disorders. Not surprisingly, those children who have both ADHD and conduct disorder had the most extreme personality profiles.

2.2. Play Therapy

Dogra and Veeraraghavan (1994) found parents and their children (ages 8-12), who had been diagnosed with conduct disorder and were exhibiting significant aggression, after receiving sixteen sessions of nondirective Play Therapy and parental counseling, showed significantly less “extra punitive” responses and significantly higher “impunitive” and “need-persistence” compared to the control group. Additionally, they exhibited significant positive change in adjustment while significantly decreasing aggressive behaviors.

Wong, Morgan, Crowley and Baker (1996) studied school maladjustment using the board game ‘Stacking the Deck’, to teach social skills to boys diagnosed with conduct disorder (ages 16-17) who were mildly retarded found eight sessions or less showed “clear improvements after unit training.”

Schmidtchen, Hennies and Acke (1993) compared a treatment group of children (ages 5-8), who exhibited behavioral disturbances and received thirty sessions of nondirective Play Therapy with a control group receiving non-Play Therapy social education. Results showed a decrease in behavioral disturbances and an increase in “person-centered competencies.”

Burroughs, Wagoner and Johnson (1997) studied twenty-one participants (ages 7-17) whose parents were either divorced or divorcing. They found that treatment group members who played 'My Two Homes' as well as group members who participated in conventional Play Therapy exhibited a decline in parents' scores on the 'Internalizing Scale of Child Behavior Checklist' as well as the parent form of the 'Children's Depression Inventory'. State and trait anxiety also decreased in both groups.

Kaduson and Finnerty (1995) conducted a study with sixty-three children between the ages of eight and twelve. The authors compared three groups of children diagnosed with Attention-Deficit Hyperactivity Disorder (ADHD) using a game (Self-control Game) for one group, biofeedback for another and control strategic game only in the final group. Results indicated biofeedback was the most effective in improving the child's self-perception of self-control. All three groups indicated a significant improvement in sociability and attention.

Springer, Phillips, Phillips, Cannady, and Kerst-Harris (1992) found that peer Play Therapy groups, combined with art therapy groups and family Play Therapy groups, combined with art therapy groups, have been shown to improve depression and hyperactivity scores, in both boys and girls.

Renck and Grand (2006) found that dance therapy can be a successful method for reaching children and adolescents with problems. This study shows that hyperactive and unruly boys with ADHD became calmer and played better with playmates. Depressed and self-destructive teenage girls were better at setting limits,

and their depression was alleviated. It may seem strange to prescribe movement and stepped up activity for boys whose problem is basically that they can't stop moving or calm down. But it works. The exercises start at full throttle and then move on to components where you need to listen and mimic, play to music, play roles, and then perform slower and slower moves.

Ray, Bratton, Rhine and Jones (2001) conducted a meta-analysis that included 94 experimental studies, dated from 1940 to 2000. The studies included were journal articles, dissertations, or unpublished studies. Each study included a control or comparison group design and pre–post measures. The child participants ranged in age from 3 to 16 years old, with a mean age of 7.1. Results revealed that Play Therapy yielded an overall effect size of .80 (i.e., large positive treatment outcome). Characteristics of treatment associated with outcomes were explored, such as the influence of different Play Therapy theoretical models on outcomes. Studies were coded as follows: (a) 74 studies were coded as humanistic - nondirective Play Therapy, (b) 12 studies were behavioral - directive Play Therapy, and (c) 8 were not coded because of a lack of information. The humanistic - nondirective category demonstrated a slightly larger effect size (ES = .93) than the behavioral - directive category (ES = .73); however, the authors caution that this difference is likely influenced by the disproportionate number of studies in the two categories. When comparing the effect of general Play Therapy with filial Play Therapy, it was found that the filial therapies exhibited a greater effect (ES = 1.06) than general play therapies (ES = .73). Similar to LeBlanc and Ritchie's (1999) findings, routine parental involvement in treatment was a significant predictor of

outcome ($p = .008$). Likewise, the population was clinical versus analogue and the age or gender of participants was found to be unrelated to outcome.

Collectively, the two meta-analytic studies revealed that play interventions have moderate to large positive effects ($ES = .66$ to $.80$) on outcomes. Play interventions appear to be effective for children across treatment modalities (group, individual), age groups (3 to 16 years), gender, referred versus nonreferred populations, and treatment orientations (humanistic - nondirective, behavioral - directive). Thus, these reviews provide evidence for the clinical utility and efficacy of play interventions with children and families. However, a compilation of innovative, well-designed, and empirically supported play interventions and reviews of the outcome literature had yet to be published in one text. This book serves as the first published text of empirically validated play interventions for children.

Hansen, Meissler and Ovens (2002), present a group Play Therapy model designed for youth that present with Attention Deficit Disorder/Attention-Deficit/Hyperactivity Disorder (ADD/ADHD) symptomatology. These symptoms include, but are not limited to impulsivity, disruptive behaviors, social skill deficits as well as ineffective communication skills. This model, unlike current deficit, psycho educational models, is based on a Play Therapy, process-oriented framework. The model utilizes concepts from attribution theory as well as social learning theory to assist in skill enhancement and practical social experience. The research on this program will demonstrate a positive impact showing a significant increase in self-esteem, which ultimately allows for a heightened level of functioning and overall increased ability to engage in socially acceptable behavior.

Leblanc and Ritchie (2001) researched a meta-analysis of Play Therapy outcomes with children to determine the overall effectiveness of Play Therapy and the variables related to effectiveness. Hierarchical linear modeling was used to analyze the data. The analysis showed an average treatment effect of 0.66 standard deviations. A strong relationship between treatment effectiveness and the inclusion of parents in the therapeutic process was reported. The duration of therapy also appeared to be related to treatment outcomes, with maximum effect sizes occurring after approximately 30 treatment sessions. Play Therapy appeared to be as effective as non-play therapies in treating children experiencing emotional difficulties. Recommendations for future researchers focus on explaining therapeutic or participant characteristics that are related to treatment effectiveness.

Lefren (2000) studied the efficacy of Play Therapy on the problem behaviors of a child with attention deficit hyperactivity disorder (ADHD) was examined. The Conners' Parent Rating Scales (CPRS-48), the Conners' Teacher Rating Scales (CTRS-28), the Daily Rating Scale of target problem behaviors, and the Observation Interval Recording Sheet were used together in a pre-post-test design. The subject, a 6-year-old Caucasian boy previously diagnosed by a licensed psychiatrist as having ADHD, participated in 10 sessions of Play Therapy, over a 7-month period. A comparison of pretest and posttest T-scores and data indicated that Play Therapy was not effective on the problem behaviors of this particular child with ADHD.

Khajevand and Venkatesan (2007) conducted a cross-sectional observation and key informant intervention study to understand play behaviors of children with mild and moderate MR. The result indicated that there are different trends in play

preferences and patterns of children with MR especially in comparison to those of children with autism spectrum disorder. The absence of social play, poor understanding of rules and regulations, absence of the differentiating highlights between the two groups of children with disabilities. There is also a sizeable population of children with MR reported to be without playmates or left to play alone. This hints at the need to structure or supervise their play activities and to explore socio-demographic correlates and other family variables in relation to play behaviors of children with MR.

Panksepp, Burgdorf, Turner and Gordon (2003) examined the ability of right frontal lesions to induce hyperactivity in rats. They also evaluated the effects of chronic Play Therapy during early adolescence to reduce both hyperactivity and the elevated playfulness later in development. Play Therapy was able to reduce both hyperactivity and excessive playfulness. In additional work they found that access to rough-and- tumble play in normal animals could enhance subsequent behavior indices of behavioral inhibition that appeared to be independent of increased fearfulness and fatigue. Overall, these results suggest that 1) neonatal frontal lobe lesions can be used as an animal model of the over activity in ADHD and 2) rough-and-tumble Play Therapy may be a new useful treatment for ADHD.

The above mentioned literature puts forward contrasting views and raises thought on the effect of Play Therapy on children with ADHD. Over the past two decades there has been a concerted effort to develop and implement well-designed controlled play intervention studies. But there are few studies conducted focusing on the effectiveness of Play Therapy on ADHD symptoms on children. The present research attempts to understanding the relationships between Play Therapy and reducing ADHD symptoms.

2.3. Yoga Therapy

Though Yoga has a long history, as a therapy for children it has been applied very recently on ADHD children. Some research studies are given below.

Peck (2005) examined the Yoga as an intervention for children with attention problems. Participants in this study were 10 1st-3rd grade children (3 boys and 7 girls) whose teacher had referred them for consultation services at their school because of concerns related to attention difficulties in the classroom. None of the children had been formally diagnosed with ADHD and none were receiving medication for attention difficulties. In fact, during the intervention, students with attention difficulties were observed to be on-task at virtually the exact same rate as comparison students. Results from this interesting study provide preliminary evidence that Yoga may be a helpful intervention for improving time on-task in the classroom for students with attention difficulties.

Benson, et al. (2000) examined the relationship between exposure to a relaxation response curriculum and academic achievement among middle school students. Teachers were trained in how to teach relaxation response exercises and self-care strategies to their students. In addition, trainers modeled for teachers how to teach relaxation and self-care strategies to the students in the classroom. Four measures of academic outcomes were analyzed: grade point average, work habits, cooperation, and attendance. Students who had more than two exposures to semester long classes in which teachers had been trained in the relaxation response curriculum had higher grade point averages, work habits scores and cooperation scores than students who have two or fewer exposures. In addition, students who had more exposures to the relaxation response curriculum showed an improvement in academic scores over the course of a two-year period.

Lohaus, Klein-Hessling, Vogeles, and Kuhn-Hennighausen (2001) compared the effects of progressive muscle relaxation and an imagery-based relaxation training on children's physiological and subjective responses in a randomized controlled trial. Sixty-four children, aged 9 to 13 years, were randomly assigned to either one of three experimental conditions: progressive muscle relaxation, imagery-based relaxation or a control condition (neutral story). There were five training sessions in each condition. Heart rate (HR), skin conductance level (SCL), and skin temperature (ST) were measured continuously during a 5-minute baseline period, an 8-minute relaxation training period, and a 5-minute follow-up in each session. In addition, subjective ratings of mood and physical well-being were collected intermittently. The study found that physiological indications of relaxation were most clearly associated with the imagery-based relaxation approach - decreases in HR and SCL - although ST remained unchanged. In contrast, progressive muscle relaxation led to an increase in HR during the training. The neutral story condition showed a similar trend as the imagery - based relaxation approach (although not reaching statistical significance). Furthermore, children's ratings of positive mood and physical well-being increased during baseline and training periods, but there were no differences between training conditions.

Platania-Solazzo et al. (1992) examined the immediate effect of relaxation therapy in 40 hospitalized children and adolescents with diagnoses of adjustment disorder and depression. The effects were assessed using a within subjects pre-test/post-test design and by comparison with a control group of 20 depressed and adjustment disorder patients who watched a 1-hr relaxing videotape. The 1-hr RT class consisted of Yoga exercise, a brief massage and progressive muscle relaxation. Results showed decreases in both self-reported anxiety in anxious behavior and fidgeting as well as increase in positive affect in the RT, but not in video group.

Subrahmanyam (1988) studied Science of Yoga and its role in therapy. He applied Yoga on patients with, 1) mild aggressive hyperkinetic behavior, 2) moderate mental retardation, 3) epilepsy, 4) hypertension, and 5) bronchial patients. All psychiatric patients were taught meditation in two poses, namely, Vajaasana and Padmaasana. All of them practiced twice a day, both in the morning and evening for about 20 minutes, for a period of 6-12 months. Results showed that, clinically, all the patients showed considerable improvement.

Jensen and Kenny (2004) studied the effects of Yoga on the attention and behavior of boys with Attention-Deficit/Hyperactivity Disorder (ADHD). This study showed significant improvements from pre-test to post-test were found for the Yoga, but not for the control group on five subscales of the Conner's Parenting Scale (CPRS).

Denkowski, Denkowski and Omizo (1983) investigated the effect of reduced muscular tension brought about by EMG-assisted relaxation training on hyperactive boys and found a modest improvement in self - control necessary to improve attention and significant improvement in scholastic performance. In Zipkin's (1985) review of the benefits of Yoga and relaxation training, inattentiveness, hyperactivity, and impulsiveness have been reported to be reduced with consequent improvement in the ability to relax and focus more on learning.

In a study by Manjunath and Telles (2004), they found that Yoga training produced a significant increase in spatial test scores, suggesting that Yoga breathing improves performance in a right hemisphere-specific memory test. Similar study by

Naveen, Nagarathna, and Telles (1997) found that uni-nostril breathing facilitates the performance on spatial and verbal cognitive tasks, said to be right and left brain functions, respectively.

Pauline and Diana (2004) investigated the effects of Yoga practice program on the attention and behavior of boys aged 8-13 years who were diagnosed with attention-deficit/hyperactivity disorder (ADHD). Boys were assessed pre- and post-intervention on the Conners' Parent and Significant improvements from pre-test to post-test were found for the Yoga, but not for the control group on five subscales of the Conners' Parents Rating Scales (CPRS): Oppositional, Global Index Emotional Liability, Global Index Total, Global Index Restless/Impulsive and ADHD Index. Significant improvements from pre-test to post-test were found for the control group, but not the Yoga group on three CPRS subscales: Hyperactivity, Anxious/Shy, and Social Problems. Both groups improved significantly on CPRS Perfectionism, DSM-IV Hyperactive/Impulsive, and DSM-IV Total. For the Yoga group, positive change from pre- to post-test on the Conners' Teacher Rating Scales (CTRS) was associated with the number of sessions attended on the DSM-IV Hyperactive-Impulsive subscale and with a trend on DSM-IV Inattentive subscale. Those in the Yoga group who engaged in more home practice showed a significant improvement on TOVA Response Time Variability with a trend on the ADHD score, and greater improvements on the CTRS Global Emotional Liability subscale. Results from the Motion Logger Actigraph were inconclusive.

Broocker (2004) offers a comprehensive program for preventing and treating disease based on Yoga postures, relaxation, and diet. Noting that Hatha Yoga has

been scientifically documented to relieve stress and enhance flexibility, she outlines restorative practices for common ailments.

Barnes and Nagarkar (1989) examined the relationship of Yoga education and scholastic achievement. They found that results of Yoga training were obvious in the manner in which the students carried out their duties, being more attentive and remain relaxed. The awareness of their mental state and processes help them to concentrate better though occasionally in normal circumstances the attention would waver and they were able to come back to the task they were at. The main objective of Yoga training was quite clearly drawn out by their regular practice of Yoga. Their changed attitude towards studies, their conscious effort at concentration, the positive effect of relaxation and how it can be used to get rid of anxieties and tensions was remarkably demonstrated by improved scores during post testing period.

Baby-Shari and Jayan (2007) investigated the efficacy of relaxation- the Yogasana way for stress and health problems. They found that psychological as well as physiological health problems are found to be decreased through intervention. Decrease was found in all stress domains but less decrease was found in the physical health problems.

Pilgkington, Kirkwood, Rampes and Richardson (2005) examined the effect of Yoga on depression. They found that the initial indications are of potentially beneficial effects of Yoga interventions on depressive disorders.

The above literature presents contrasting observations of the effect of Yoga therapy on ADHD children. Some suggest that Yoga positively affects the mental health and behavioral problem. However, there are studies which negate the same. There are no studies conducted studying the effect of Yoga therapy on ADHD children on an Iranian sample. In this context, the present research attempts to study the same on a sample of Iranian children.

Barnes and Nagarkar (1989) investigated the effect of Yoga education and scholastic achievement. Children in treatment group were found to carry out their duties, being more attentive and remain relaxed. The results show significant difference on test scores of SAT and NVTI during pre and post training period and clearly demonstrating the efficacy of Yoga training.

2.4. Parent Training

Stanford University Psychology Department is studying the effects of mindfulness on families. “Parents and teachers tell kids 100 times a day to pay attention,” said Dr. Philippe Goldin, “but we never teach them how” (as cited in, Brown, 2007).

A recent review of the literature that evaluated parents as information sources concluded that good quality information about children with possible developmental problems could be obtained from parent report measures (Glascoe & Dworkin, 1995). They stated that this type of parental information increased the accuracy of the clinician’s evaluation. Research has suggested that if parental concerns are carefully elicited and interpreted, they can be just as accurate as developmental-behavioral screening tests in detecting children with disabilities (Diamond, 1987; Glascoe, 1997a, 1997b, 2000; Thompson & Thompson, 1991).

Karahmadi (2007), investigated effects of parental interaction patterns on children with attention deficit hyperactive disorder (ADHD). There were 50 male children, 7-12 years old, selected in two groups. The first group included students with ADHD referred to psychiatry clinics in Isfahan-based on diagnostic scale of DSM-IV (25 subjects). The second group involved healthy boys selected by random cluster multistage sampling from primary schools in five districts of Isfahan (25 subjects) from September 2005 to March 2005. Schaffer and Edgerton Parental Interaction Questionnaire was filled for them. Results indicated that mean scores of parental interaction patterns in healthy children were all higher than those in ADHD children except for “aggression control” and “lack of aggressive attachment”. The severity of ADHD signs has negative relationship with parental "admission" and parental "control" patterns. It also has positive relationship with “lack of aggressive/attachment” and “aggressive/control” patterns. Siezer et al concluded that two dimensions of parental communication with children (admission versus rejection and taking hard versus taking easy) are very important (as cited in, Karahmadi, 2007).

Some researchers investigating the effect of familial interaction patterns in ADHD either consider this disorder as a reaction towards familial disorganization such as alcohol addiction, parental chronic anxiety and mother’s depression or as being due to inappropriate environmental stimulators such as high number of family members or lack of comfort; since a high number of ADHD affected children are found in crowded families.

Barkley, Anastopoulos, Guevremont and Fletcher (1992a) showed in their researches that ADHD adolescent's young mothers have more negative communication with their children compared to other mothers and that they lose temper sooner in a conflict. These adolescents' mothers are often stubborn and dictatorial and they are less interested in problem solving. Their specific interaction pattern makes communication and conflict solution more difficult.

Johnston (1996) in a research investigated parents-ADHD children interaction and observed that these parents show a more negative reaction to their children and employ fewer positive methods. The above studies showed that mothers with ADHD children have a more controlling and critical method, use less mutual social relation and answer to their children less .

A few other studies (Aspland & Gardner, 2003; Whalen & Henker, 1991) also reported the same results. The "aggressive control" interaction pattern showed a significant association with hyperactivity; the more aggressive control, the more severe the ADHD signs.

Whalen et al. (2006) studied Personal Digital Assistants - PDAs - to provide a unique window into the challenges of living with ADHD, challenges that remain despite important benefits that may be provided by medication treatment. Compared to mothers of comparison children, mothers of children with ADHD were more likely to record their child as displaying problematic behavior when prompted by the PDA. Overall results from this intriguing study point to continued difficulties in the daily experience of children with ADHD and their mothers and highlight that

medication treatment - although it can be extremely helpful to many children- often fails to normalize children's behavior. Instead, residual difficulties often adversely impact the daily lives of children with ADHD and their parents. Of course, this does not necessarily apply to all children with ADHD and their parents, although the overall group trends were quite clear.

Harvey, Danforth, Ulaszek, McKee and Friedman (2003) examined the relation between parents' self-reported ADHD symptoms and their parenting behavior both before and after participating in a behavioral parent-training program. The authors predicted that parents who reported more ADHD symptoms would demonstrate less effective parenting strategies before parent training and would show less improvement in their parenting skills after parent training. Results from this study are consistent with the hypothesis that ADHD symptoms in parents tend to be associated with less effective parenting practices. Fathers' who reported more symptoms of inattention and impulsivity were more permissive and reactive with their child before and after parent training. Fathers' impulsivity was also associated with more arguing with their child before parent training. For mothers, inattention was associated with lax parenting before and after parent training, and with more problematic child behavior after parent training. In addition, mothers with clinically elevated levels of inattentive symptoms benefited less from the parent-training program. This is consistent with a prior finding that mothers with high levels of ADHD symptoms showed the least response to parent training.

Results from the above study have several important implications. First, they highlight the potential value of assessing ADHD symptoms in parents when their child is being evaluated for ADHD. ADHD is known to be more common in

parents who have a child with ADHD and may not have previously been diagnosed. This study indicates that in such situations, parents' ADHD symptoms can undermine the effectiveness of their parenting and the benefit they derive from working on their parenting skills. Treating ADHD symptoms in parents may thus be an important component of effectively managing ADHD in children, not to mention the benefits such treatment may have for parents independent of their parenting role. Noorbala and Akhondzadeh's (2006) neurochemical studies suggest alterations in catecholaminergic, mainly dopaminergic and noradrenergic, transmitter functions markedly contribute to the symptoms of this disorder. The symptoms of attention-deficit/hyperactivity disorder are significantly ameliorated by the agents that specifically influence these neurotransmitters. Animal studies implicate areas of the brain in which these neurotransmitters are most dominant. Psycho stimulant medications are generally the first choice in the treatment of attention-deficit/hyperactivity disorder. Approximately 70% of the children treated showed improvement in the primary attention-deficit/hyperactivity disorder symptoms and in co morbidity such as conduct disorder, although the benefits may not hold beyond two years. Despite the well-established efficacy and safety of stimulants for attention deficit/ hyperactivity disorder, alternative medicines are still needed for several reasons. About 30% of children and adolescents with this disorder may not respond to stimulants or may be unable to tolerate potential adverse events such as decreased appetite, mood liability and sleep disturbances. Although stimulants do not increase the risk for later substance abuse in attention deficit/ hyperactivity disorder, concerns have been raised about special prescription rules and a potential for abuse by persons other than the attention-deficit/hyperactivity disorder subjects. This review focuses on etiology, assessment, and treatment of attention-deficit/hyperactivity disorder.

Jonson, Franklin, Hall and Prieto (2000) Examined the possibility that combined parent-child interaction therapy and Play Therapy can help families of children with attention deficit hyperactivity disorder (ADHD) to cope with their situation. Children with ADHD are more at risk to experience relationship conflicts, especially when the environmental demands exceed their capacity to cope. This leads to whole family of ADHD children, experiencing more stress and conflict. There are parenting programs, which stress the importance of consistency and follow-through that help family cope with ADHD children.

2.5. Significance of the study

It is commonly seen that children with ADHD experience significant functional problems, such as school difficulties, academic underachievement, troublesome interpersonal relationships with family members and peers, and low self-esteem. Children with ADHD often have difficulty in peer relationships, which could result in fewer opportunities to participate successfully in organized peer group activities. In children with both ADHD and depression, it is almost always the case that ADHD emerges first, and depression emerges later in development. This has led researchers to consider what it is about ADHD that might predispose children to develop depression, low self esteem and other problems. These difficulties can lead important others in the child's life to develop negative appraisals of the child's social competence that are communicated to the child during the course of ongoing negative social exchanges. With increasing age, these negative social experiences and others' negative appraisals can adversely affect children's view of their social competence, which, in turn, can predispose them to develop conduct disorder, anti social symptoms etc.

Play Therapy and Yoga are therapies that help to promote mental well being and competence in children with ADHD as they face the realities of their disorder. By this therapy they can learn, project out, practice skills and it empower them to take responsibility for their actions.

The importance of Play Therapy and Yoga has been elucidated in the review of the related literature that has shown the multiple uses of Play Therapy and Yoga program in a wide variety of primitive and preventive educational programs with considerable effectiveness. The benefits of play for healthy cognitive development (Bornstein & O'Reilly, 1993; Piaget, 1962); language development (Lyytinen, Poikkeus, & Laakso, 1997; Tamis-LeMonda & Bornstein, 1994); social competence (Parten, 1932); and physical development (Pellegrini & Smith, 1998) have been well established. Play has the power not only to aid in normal child development but also to help alleviate emotional and behavioral difficulties. Two meta-analytic studies have examined the effectiveness of Play Therapy with children (LeBlanc & Ritchie 1999). The effectiveness of Play Therapy and art therapy with children identified as having one parent suffering from alcohol or drug dependency (Dogra & Veeraraghavan, 1994), children diagnosed with aggressive conduct disorder and non-directive play. Benefits of Yoga for children with Down Syndrome, Autism Spectrum Disorder/Pervasive Developmental Delay, Cerebral Palsy, Attention Deficit Hyperactivity Disorder, and Sensory Processing Disorders (Richmond, 2007); Yoga and effect on the internal functioning of the human body (Iyengar, 2005), Yoga therapy an effective method of treatment for a variety of ailment (Binzen, 2006).

Literature related to Play Therapy and Yoga, psychological resources cited above lead to the following assumption:

1. From the review it can be inferred that Play Therapy and Yoga programs are generic type of treatment that furnish some of the basic skills for the foundation of psychosocial and psychological competence. These psychological competencies play a very important role in the promotion of health in terms of physical, mental and social well being. Particularly, where health problems are related to behavior, and behavior related to an inability to deal effectively with symptoms of disorder, the treatment of the same could make an important contribution. Individuals with a history of untreated childhood ADHD are more likely to experience conduct disorder, substance abuse, antisocial behavior, and injuries later in life. Early recognition, assessment, and management of this condition can redirect the educational and psychosocial development of most children with ADHD.

2. The above literature suggests that psychological resources such as self concept, self esteem, self efficacy and given opportunity to express their feelings and self control skills present in an individual will enhance their potential to the maximum thereby enabling them to utilize their potentials to the maximum. It has also been observed that the ADHD children not just lacks in self control but also psychological resources.

Theory suggests an interrelationship between ADHD symptoms and lack of control and psychological resource, and it seems that an ADHD child lacks both. Thus the need arises to investigate in this direction.

3. The review has heavily focused on the outcomes of behavioral appearance like, interrupting, fidgetiness, finger tapping in the classroom, and use of medication

treatment but neglecting the importance of self control skills and self concept in ADHD children.

4. There have been a limited number of research studies conducted to understand psychological social and educational aspects of their life. Therefore, there is a need felt to employ an interactive treatment approach to understand the ADHD children's psychological resources, because most of the existing studies have not employed a multidimensional approach.
5. Most of the research work carried out focused on the ADHD disorder from behavioral deficit angle rather than emotional angle. In a similar way the problems of the ADHD children may be dealt with by providing adequate training as recommended by the researchers. More research is needed to identify the special problems of this group and devise appropriate intervention strategies. This is why the present study was designed to experimentally investigate the extent to which an intervention can bring about effective results.
6. It is observed from the literature reviewed that the focus was mainly a part of the behavior and psycho therapy. Some researchers have made an attempt to bring up the ADHD training programs independently (not as part of the psychotherapy and behavior therapy) as an intervention equivalent to other modes of mental health enhancement techniques. Therefore, it is necessary to empirically validate the psychotherapy treatment to meet the needs of ADHD children.
7. Most of the research findings that have been reviewed and cited reveal that the components of their interventions are limited to a few subjects. It is observed that there is a need for implementing with larger sample.
8. The above literature suggests that, the most important and the first social factor to be investigated is the family unit. The family unit is the first place where physical, emotional and personal characteristics are gradually formed. The role

of family unit as the first educational environment, either in causing or not causing behavioral disorders, diseases and mental disorders cannot be ignored. Family acts as a center of love and affection, education and emotions. Eventually, the family completes the personality and psychosocial balance. Since ADHD children face psychomotor emotional and educational problems, parents have a negative reaction to them. They even impose physical and emotional abuse and contempt towards them. The family members, in fact, try to control the child's behavior and focus him on a specific subject through punishment. But, this is not only inefficient but also makes him/her tired and anxious. In this way, the child is actually more stimulated. So, the disorder is not treated but increased by disobedience and stubbornness. This is why the present study designed parents training a part of play and Yoga therapy to extend effectiveness of therapy.

9. Research reviewed show there are very few studies conducted in Iranian ADHD children. This is why the present study was designed to be conducted in an Iranian environment.

The above mentioned literature throw light on the relationships with present study's dependent variables; Yoga/Play Therapy and parenting training and ADHD's symptoms reduction .Though some studies suggest that higher Yoga practice or Play Therapy session and better parenting can lead to lower severity of ADHD symptoms, and some studies suggest no such inverse relationship, the problems associated with ADHD disorder in children can be managed. Thus the self control skills and psychotherapy treatment will help them to handle the ADHD symptoms in every day life situations with least difficulty. Hence, the present study aims at exploring in this direction and considering the issue of the influence of Yoga/Play Therapy and parent training on the ADHD symptoms.