UNIVERSITATEA "BABEŞ - BOLYAI"

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DOCTORAL THESIS SUMMARY

The Results of an Early Intervention Program for Children with ADHD

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Abstract

Introduction :

Attention Deficiency Hyperactive Disorder (ADHD), also known as hyperkinetic disorder (WHO, Word Health Organisation, 1992) is considered to be one of the most prevalent childhood disorders, affecting 3-10% of primary school age children in Europe and the USA (American Psychiatric Association, 2000).

The commonly accepted diagnostic definition for ADHD is the DSMIV-TR (Diagnostic and Statistical Manual, 2000). Symptoms of the disorder listed in the DSMIV include: limited attention span, impulsive behaviour, avoidance of mental tasks that demand sustained effort, seeming inability to listen when spoken to, difficulty in organizing personal belongings, speaking incessantly, blurting out before one's turn, interrupting and difficulty in social interactions. The symptoms should be visible over an extensive period of time and appear in more than one environment. Children, who are excessively active, unable to sustain their attention span and are impulsive to a degree that is not developmentally appropriate, are defined as having ADHD (American Psychiatric Association, 2000).

The most widely used form of treatment for ADHD is the use of psycho-stimulants, which is considered a controversial treatment. Psycho-stimulants used to address ADHD include methylphenidate, dextroamphetamine and mixed amphetamine salts. These stimulants are neurotransmitters, all of which enhance the transmission of dopamine. The medical model of ADHD is the most widely accepted theoretical model for the diagnosis and treatment of the disorder. This research did not discuss the advantages or disadvantages of the use of psycho-stimulants as treatment for ADHD rather it focused on the application of an educational model as a possible alternative to the medical model to relieve the symptoms of ADHD.

There is strong evidence that ADHD is highly heritable. Studies of families and siblings have shown that parents and siblings of children with ADHD have a two to eightfold increase risk for ADHD. The DSMIV-TR (2000), is the acceptable diagnostic tool today for ADHD. Diagnosis involves the identification of a list of specific behaviours over an extended period of time, in more than one environment, though the manual does not address the problem of ADHD under the age of 7 years

old. However, if this is a genetically based disorder it would thereby seem logical that it would be possible to observe problematic behaviour before the age of seven. Therefore, there seems to be a gap of knowledge regarding the diagnosis of ADHD in early childhood. Acceptance of the notion that the onset of psychopathology is based in early childhood development, means that ADHD symptoms should be identified and treated in early childhood as a preventive measure for future developmental problems. This research focused on the identification of ADHD in early childhood and investigated the affect ADHD behaviours have on the quality of interpersonal relationships between young children , their parents and kindergarten teachers. This research was based on the preventive philosophy that by early identification and intervention it would be possible to modify the challenging behaviours that children with ADHD characteristics bring with them and as such improve the interpersonal relationships between the young children and the significant adults in their lives. The quality of interpersonal relationships being crucial to healthy mental development.

Historically, young children's affective behaviour and behaviour dysregulation has been addressed in relation to set cut off points in the spectrums of normative behaviours and emotions or temperamental traits. In these models, extremes of problem behaviours or temperament traits have been regarded as precursors of, or risk factors for later psychopathology, rather than manifestations of psychiatric disorders similar to those identified at later stages in life (Egge & Angold, 2006).

A study from 2004 that identified younger children with ADHD, showed that those children who met the criteria for the disorder exhibited greater social and academic impairment over a period of three years when compared to other children not identified with ADHD; and had more places in special education and received more injuries than the compared group (Lahey, Pelham, Loney et al., 2004). Long term studies also show a positive correlation between hyperactivity and conduct disorder, psychiatric problems in adolescence and educational and occupational failure (Thaper, Langley, Asheron & Gill, 2007).

Significant questions should be asked when considering diagnosis of disorders in early childhood. How are these children being diagnosed? What criteria are being applied? Are the criteria developmentally sensitive? Retrospective studies show that a substantial proportion of psychiatric disorders start in childhood or adolescence

(Kessler et al., 2005a; Kim-Cohen et al., 2003) so this period of development could be critical for early identification, diagnosis and preventive treatment. Even when diagnosis is attempted, parents and clinicians have reservations about using medication to control behaviour at such a young age (Berger, Dor, Nevo & Goldzweig, 2008). On the other hand, behaviour modification programs are more complex and time-consuming to implement and may be less efficacious for core symptoms of ADHD (Antshel & Barkley, 2008). Most diagnoses have been based on behaviour patterns in adults or young children of school age but no developmentally appropriate specific criteria have been built for the pre-school age group.

The proportion of problematic behavioural patterns, such as deficient emotion regulation and control, that interfere significantly with pre-schoolers' development and social functioning is estimated to be between 5-14% in the child population (Egger & Angold, 2006; Eisenberg et al.,2001; Lavigne et al., 1996; Moffitt, et al., 2007). Studies have also shown that these behavioural patterns are particularly difficult to treat, persist over the child's development and are related in predictable ways to children's long term adjustment (Eisenberg et al., 2001; Kazdin, 1987). One of the central features of ADHD is a lack in self-regulatory behaviour . The intervention program focused on the implementation of teaching strategies suitable to pre-school , Mediated Learning and "Scaffolding" as the base for the intervention program that focused on increasing self-regulatory behaviours in the young children that participated in the intervention program. The assumption being that by increasing self –regulatory behaviours in the young children there will be a significant improvement in the interpersonal relationships between the young children and the significant adults , namely their parents and kindergarten , and as such improving the mental wellbeing of these children. The characteristics of ADHD are thought to be long term, affecting adolescents and adults. Early childhood is a critical time for developmental trajectories , therefor with early intervention and the adoption of increased self-regulatory behaviours , children exhibiting ADHD traits will develop a higher level of resilience and be more successful in their adaptive behaviour.

An alternative way of perceiving developmental disorders is through the bio-psycho-social model (Engel, 1997) meaning that the disorder is viewed within a spectrum between risk factors and the interplay of environment. Children who are at a genetic risk for particular disorders, will show a positive alteration to underlying neuro-

biological processes, following appropriate interaction with the environment .This is a dynamic, optimistic conception of disorders, especially appropriate in early childhood when the development of the brain is still flexible.

The present research investigated the results of an intervention program for preschool children between the ages of 2-5 years, with symptoms of ADHD (Attention Deficiency Hyperactive Disorder).The program aimed to change elements in the child's environment that were felt to be less appropriate in the interpersonal relationships between the young children their parents and kindergarten teachers.

According to the Ecological Theory developed by Bronfenbrenner (1986), young children develop within interlocking systems of influence, home and family, educational environments, local community, culture and country. The concurrent relationships between these systems can affect the child's development. Therefore, when considering the application of an intervention model, it is crucial that the program be implemented both in the home environment and kindergarten environment simultaneously, to extend the possibilities of maximum effect.

Since they find it difficult to adjust to daily life activities, children who have ADHD symptoms are susceptible to negative reactions from their environment (Taylor, 2004). This means that children of preschool age with ADHD may experience at least five to six years of negative reactions from their immediate environment, before receiving appropriate intervention, with a consequent adverse effect on their self-image and confidence. The desire to avoid such negative processes motivated the present research, which aimed to develop an effective intervention program that could help preschool age children of exhibiting ADHD behaviours, to develop more successful interpersonal interactions with their immediate environment, home and preschool educational settings and to equip their parents and kindergarten teachers with appropriate skills to improve the quality of their interpersonal interactions with these children.

In addition to ethical difficulties involved in investigating ADHD at an early age, there are also practical difficulties. The exhibited behaviours of low concentration spans, impulsivity and extensive motor behaviour are normal behaviour patterns for preschool children; therefore when can this pattern of behaviour be considered problematic? According to Barkley (1997) the behaviour becomes problematic when

it affects the child's ability to adjust to the demands of everyday living. The ability to adapt to everyday demands requires a high level of self-regulation. This study focused on the element of self-regulation skills as a central requirement for adjustment in a daily schedule and as an ability that is underdeveloped in children with ADHD (Barkley, 2007).

The research was based on the assumption that early identification of children with ADHD and application of the intervention program aimed at improving the child's self-regulation skills, through efficient teaching strategies as an alternative to the medical solution, could benefit children, caretakers and parents by improving their interpersonal interactions and as such act as a preventive measure against escalation of problematic behaviours. The advantage of such a program was that it could be easily implemented in the daily schedule and did not involve other professional functions apart from the kindergarten teacher.

Key words : **ADHD, Self-Regulatory Behaviours: Interpersonal Relationships: Mediated Learning :Scaffolding: Consultation :Intervention Program: Preschool.**

I.1 Gap in Knowledge: ADHD is a subject that has been widely researched in children of school age, adolescents and even adults. Being a genetically based disorder it seems logical that it would be possible to identify characteristics at pre-school level. There is very little research done at this age level, and most relates to the treatment of the disorder from a medical perspective as opposed to an educational solution.

II Theoretical Perspectives:

ADHD is generally viewed today as comprising two major symptoms, (1) inattention and (2) hyperactive–impulsive behaviour, or dis-inhibition (American Psychiatric Association, 2000).

(1)Inattention :

Inattention is seen as a child's inability to sustain attention in play activities or to perform tasks as other children of the same age group do. These children also exhibit difficulties in following through on instructions or rules. Parents and teachers

complain that they do not complete assignments, have difficulty in concentrating, day dream and change activities frequently (Barkley, Du Paul & McMurray 1991). These children are also more likely to perform less well in tedious tasks (Ullman, Barkley and Brown; Ceci & Tishman, 1984; Luk, 1985.)

(2)Hyperactive-Impulsive behaviour (Dis-inhibition):

The ability to self- regulate one's behaviour depends on three interrelated processes

.1 Inhibition of the original response to an event.

.2 The ability to delay a decision to respond or to stop an on-going response pattern.

.3 The ability to withstand outside interferences that might affect the self-directed response.

In ADHD all three processes are impaired.

II.1Self-regulation and ADHD:

Self–regulation is a response directed by the individual at himself rather than at an environmental event that may have initiated the response (Barkley,1997). Berkowitz (1982) defines self-regulation as the individual's "ability to intentionally manipulate covert mental events, mostly inner speech and images, in order to regulate one's own behaviour" (p. 25). This self-directed behaviour might be directed to a modification of an individual's behaviour or to the implementation of a change in the environment to enable a change in their behaviour. Self-regulation consists of an array of complex mental capacities that include impulse and emotional control, self-guidance of thought and behaviour planning, self-reliance and socially responsible behaviour (Bronson, 2000; Kopp, 1991). Raffaeli et al. (2005) define self-regulation as the "internally directed capacity to regulate affect, attention and behaviour, to respond effectively to both internal and environmental demands" (p. 54). Additionally, a self-regulated person is one who can comply with a request; can initiate and cease activities according to situational demands; is able to modulate the intensity, frequency and duration of verbal and motor acts in social and educational settings; is able to postpone acting upon a desired object or goal; and is able to generate socially approved behaviour in the absence of external monitors (Kopp, 1982). In other words,

self-regulation seems to be a central trait in enhancing a person's adaptation abilities and vital to the development of efficient social skills.Children with ADHD characteristics exhibit low abilities in inhibitory behaviour and great difficulties in self-regulatory behaviours.

Children with ADHD are seen to fidget more, have difficulty in staying seated, running about more than other children, climbing and playing noisily, talking excessively, interrupting others and are less able to wait in turn (American Psychiatric Association, 1994). Parents and teachers describe them as being incessantly in motion, with low self-control (Barkley, 1997). If this deficiency is apparent from an early age, this perhaps indicates that an early intervention program could help these children improve their self-regulating skills. In contrast to the large number of genetic studies of ADHD in school–aged children, only a few studies have studied ADHD in pre-school children.

A number of factors have been noted to influence the abilities of a child with ADHD in sustaining their attention in task performance, controlling their impulses and managing to sustain an extended work period including: time of day and fatigue (Porrino et al.,1983, Zager & Bowers, 1983) , increasing task complexity (Douglas,1983), level of stimulation within the setting (Zentall, 1985), schedule of immediate consequences associated with the task (Barkley & Sivage,1980; Douglas & Parry 1983,1994) and lack of adult supervision during task performance (Draeger, Prior , & Sanson,1986 ; Gomez & Sanson,1994b). It would seem then that to enable children with ADHD to gain better self-control it is essential that a significant adult take an active part in the processes. There is no consensus concerning the manner in which the child can gain internal self-control. The conflicting perspectives depend on which "theoretical narrative" is being emphasized.

Motivated by profits, the pharmaceutical companies encourage the medical model of ADHD, in which intervention is based on behavioural models and drugs instead of empowering families and children to help them solve their problems (Timmi, 2002). In contrast to the medical model, Taylor et al. (1996) indicate that it is the task of professionals to understand how genetics and social influences interact. They describe how individual differences in hyperactivity are reflected in differences of brain structure, and that a particular type of DNA composition and severe hyperactivity are

strong predictors of poor psychological adjustment (Ibid). Those diagnosed with ADHD are more prone to accidents, conduct disorder, psychiatric problems in adolescence, educational and occupational failure and a lack of constructive occupations or satisfactory relationships (Taylor, 2004).The prognosis for children with ADHD seems to be affected by the intricate interaction between genes and environment.

Attention is a central feature in the developmental trajectories. From birth, individuals are bombarded with more sensory stimuli than it is possible to process and respond to (Perez-Edgar, 2012). As such one must learn to attend to those aspects of the environment that support our current goals. The ability to be selective in choosing which stimuli to react to is possibly due to a delicate balancing act between neural systems that can monitor and direct flexible, goal-directed behaviour (Perez- Edgar, 2012).This balancing act is rooted in neural development and emerges slowly over time. Over the course of childhood, increasingly more sophisticated systems develop so that the child is no longer dependent on external forces (exogenous control), but can willfully direct his or her attention from within himself (endogenous control). Problems in attention have been seen to have a high correlation with ADHD (Barkley,Depaul, & McMurry, 1991; Steingard, Biederman,Doyle,& Sprich-Buckminister, 1992).

The individual's attention abilities act as a guard to the amount of stimuli that enters. Without this guard or filter, the system becomes overwhelmed and will eventually collapse. This filter allows for flexibility, and continuous focus on target, while blocking out distractors. When this filter is inefficient then the young child becomes overwhelmed and reacts accordingly .

Information processing model (Crick& Dodge, 1994) show how children take in, interpret and respond to their environment. First they must encode a limited level of the myriad incoming stimuli. Then, they have to interpret the stimuli, and act upon them according to whether they guide or impede goal-orientated behaviour. Finally, potential reactions are selected; one is chosen and enacted on. A store of memories and past emotional experiences serves as the foundation for these decisions (Perez-Edgar, 2012).

II. 2Environmental Factors influencing ADHD

Despite the strong evidence for heritability of ADHD, the environment also plays a significant role in the phenomenon of ADHD (Price, et al., 2001).

Environmental factors implicated in ADHD include biological factors and family and psychosocial stressors. ADHD has a strong genetic causation base, accounting for approximately 75% of its diagnosis. Nevertheless, there are a number of biological and psychosocial factors that can either trigger an underlying predisposition, or modify the severity of its characteristics.

Since children with ADHD symptoms bring with them challenging behaviours, educators and parents need to recognize these characteristics and subsequently develop suitable interaction strategies, using differential educational methods, not necessarily within special education settings. The environment can either be a exuberant to the eruption of extreme behaviours, or it can be a modifier.

Interpersonal relationships may be defined as patterns of interaction with specific partners, such as parents or peers that are carried out over time and entail some degree of investment by participants (Hinde, 1979). Sroufe et al. (2000) define relationship problems as the failure to form relationships, incompetent social behaviour, social withdrawal, social anxiety; and behaviour that is noxious to others.

Many major childhood and adult disorders entail relationship disorder criteria according to the DSMV-IV. However, social behaviour is not mentioned as a major indication in the criteria of the ADHD symptoms in the DSMIV (2000). According to Greene et al. (1996) children with ADHD, in addition to behavioural problems, are at risk in social functioning, since they lack the ability to recognize important social cues and tend to handle frustration in an aggressive impulsive manner (Greene et al., 1996).

Social relationships are seen by many theorists as an important context within psychopathology (Sroufe et al 2000). All relationships develop in context and relationships with caregivers, peers and others are considered a critical part of a child's mental health development.

Studies that have investigated the element of social interactions have found that difficulties in interaction with peers, lack of social competence or unpopularity, correlate with behavioural and emotional problems (Masten & Coatsworth, 1995).

Teacher ratings of peer competence, beginning in elementary school, are reliable predictors of behaviour problems and psychopathology throughout childhood and adolescence (Sroufe et al., 1999).

Social development is also inextricably linked to the development of self-regulation. Although there are innate factors that affect the regulation of arousal, such as temperament, a young child's experiences within the social and physical environment provide direction and constraints and practice in the modulation of emotions and behaviour. The child learns what to expect from the environment, but also how they can respond and successfully interact within the social context. Experiences with people provide support, models and active guidance in how to interact appropriately with others (Bronson, 2000).

II.3 ADHD Interpersonal Relations and Social Assimilation

During preschool and kindergarten years, infants advance from external to primarily internal control, what Vygotsky called ‘private speech ‘as opposed to ‘public speech’ (1934, 1986). In addition to helping children control their behaviour independently, private speech facilitates the development of self-motivation and emotional self-regulation (Bronson 2000). As already noted, the ability to develop efficient self-regulation behaviour is affected not only by individual genetic differences and natural dispositions and gender , girls having a stronger inhibitory control ,(Kochanska et al., 2001 Mc Cabe et al, 2004a Mc Clelland et al., 2000) but also by the quality of interpersonal interactions, especially the quality of attachment between mother and child, which has been seen to affect the ability to engage in self-regulating behaviour in situations of stress (Schore, 1994). The ability to engage in self-regulating behaviour is therefore a consequence of a combination of nature and nurture factors.

II.4 Process of socio-emotional development in early years

The key social-emotional skills that children need to develop as they enter school, include self-confidence, the capacity to develop positive relationships with peers and adults, concentration and persistence in challenging tasks, an ability to effectively communicate emotions, an ability to listen to instructions and be attentive, and skills to solve social problems.

The significance of interactions and relationships that a young child experiences and builds from birth with significant adults. particularly their parents, is accepted as being central to the future development of social, emotional and affective skills (Beebe & Lachmann, 2002; Sameroff, McDonough & Rosenblum, 2006). Research conducted in this field in the 1960's highlighted the central role of the child in the co-construction of interactive exchanges with its caregiver (Beebe & Lachmann, 2002;). Research by Sander (1975) indicated that the development of interpersonal interactions is a dynamic and not linear process. According to Sander (1977, 1985,), the individual continuously engages in an exchange with their environment, creating a process of mutual regulation. Other studies have identified the central role self-regulation plays in the development of attention and interactive competences (Freedman,Barroso, Bucci & Grand, 1978). In this sense, the infant-caregiver dyad is a system that guides the infant's behavioural organisation and is unique: both infant and adult are equipped with self-regulation and self-organisation competences, both have the ability to regulate and organise their own internal states (Beebe & Lachmann, 1998). Sander's work shows how in addition to the individual processes of self-regulation, the infant-adult dyadic relationship is characterized by a parallel process of interactive regulation. Thus the communication between the infant and their caregiver is defined by a constant and dynamic interaction between self-regulation and interactive regulation processes (Sander, 1977). This intricate ‘dance’ helps build up a model of prediction and expectations with respect to the other's behaviour (Sander, 1977, cited in Carli & Rodini, 2008). During the interaction, the caregiver receives information from the infant about intentions, state of arousal and affect. Through repeated experience and interactions, the signals become known and in response the caregiver can provide regulatory support that will help the infant achieve a more complex level of organization (Tronick, 1998).

Based on the ideas of Sander (1977) and Tronick (1998) that the dyadic communicative exchange is centered on the dialectic and bidirectional relationship between self-regulation and interactive regulation, Beebe and Lachman (2002) proposed a model of balance between self and interactive regulation, assuming that the quality of interaction lies in the balance between self and interactive regulation. Flexibility of balance between self-regulation and interactive regulation, including the ability to successfully rebuild interactions after a break, yields an optimal level of

attention, activation and affective experience in the child and contributes greatly to the internal and interpersonal experience of the infant (Lavelli& Fogel, 2007).

The ability to adapt one's reactions by engaging in strategies of acceptable behaviour and to apply self-control is also an important element in social acceptance. During this time children shift from primarily external control to internal control, but the environment still plays a critical role in the development of self-regulation. It provides opportunities to develop new strategies and to practice increasing self-regulatory control. It also provides constraints within which children must operate. They become more aware of the necessity for appropriate social interactions and it is important to them to be socially accepted. They begin to build internalized standards of behaviour that they can use as a guide in the absence of adults. They can talk about mental states, such as thinking and believing and develop a more sophisticated understanding of other minds (Bronson,2000).

Preschool and kindergarten children are more advanced than infants in their ability to achieve cognitive self-regulation. They are able to select goals that are suitable for their age group and work consistently to reach these goals. In a widening range of tasks, they are able to resist distraction, use appropriate and effective strategies to monitor their progress and reach their goals successfully. Adults in their environments, specifically caregivers or kindergarten teachers that offer suitable language strategies, assist in the development of cognitive self-regulation. Questions that help children generate their own solutions foster the development of independent problem solving skills (Casey & Lippman, 1991: Casey & Tucker, 1994). During this period, children also become interested in the products that they produce and begin to evaluate their products in relation to internal or external standards. Motivation for self-regulation is aroused when they believe that that they are responsible for their actions, that they are capable of controlling them and that they have choices (Bronson, 2000).

ADHD is common among school-age children. The diagnosis of ADHD at preschool level is more complicated than in later years because of the irregular natural behaviour of young children, though in recent research conducted among young children aged two to five (Egger et al., 2006) it was concluded that ADHD symptoms are consistent with the DSM IV (2000) criteria in terms of impairment that occurs

outside the normative range for pre-school children. It was also found in the same research that preschool children diagnosed with ADHD symptoms continued to show functional impairment in a follow-up assessment, three years later(Egger et al., 2006). The impairment was exhibited in peer relationships and pre-academic skills: over 40% had been suspended from preschool, 16% had been expelled, and 50% of the parents reported difficulties in going to public places because of their children's behaviour (Ibid). These findings indicate the need for early identification and intervention. Children with ADHD are seen to be most problematic in their behaviour in situations where persistence or behavioural restraint are necessary (Altepeter & Breen, 1992; Barkley & Edelbrock, 1987; Dupaul & Barkley, 1992

Children with ADHD experience various difficulties in social situations due to a lack of social skills, and a lack of knowledge concerning social cues (Barkley, 1990,). The four most common social skill deficits that children with ADHD exhibit relate to the ability to enter social groups, conversational skills, conflict resolution, problem solving and anger control (Barkley, 1990). A social skill is defined as an ability to choose appropriate actions in social settings, such as being tactful, making friends, and settling conflicts peaceably (Taylor, 1994). Children with ADHD tend to be unaware of the impact they have on others, being unable to understand the usual social codes and signals that are used by others. As a result they do not understand why others become infuriated by their behaviour, they tend to blame any negative outcomes on other people. Children with ADHD also have difficulty keeping friends since they tend to intrude on others' boundaries (Gresham, 1998, Taylor 1994).

II.5 Intervention in early childhood for children with challenging behaviours

Smith and Fox (2003) defined challenging behaviour as "any repeated behaviour that interferes with or is at risk of interfering with optimal learning or engagement in pro-social interactions with peers and adults" (p. 5). Children exhibiting ADHD characteristics are definitely children that could be included in this definition. As stated above they are seen to be aggressive, find it difficult to interact with others and lack self-inhibition. These behaviours present a tremendous challenge for parents and preschool teachers in their daily interactions**.**

One of the most difficult things that children need to achieve is effective social emotional behaviour. The environment of preschool can either advance social skills or exuberate behaviour problems. There are many factors affecting the quality of child care, low child/staff ratios, small class sizes, and teacher qualifications in the effective delivery of programs(http://www.centerforpubliceducation.org/Main-Menu/Pre-kindergarten/Pre-Kindergarten/Pre-kindergarten-What-the-research-shows.htm.)
There are in addition a number of factors that potentially contribute to the development of child behaviour difficulties: at the individual level, temperamental difficulties, aggression, language difficulties, noncompliance and self-regulatory abilities (Stormont, 2002; Barkley, 1997, Bronson, 2000); and family factors such as, maternal depression, harsh parenting or stressful family life events (Brook-Gunn, Duncan & Aber, 1997; Harden et al., 2000; Stormont, 1998).

In order to be able to intervene to prevent negative consequences of early challenging behaviour, it is now understood that early identification and intervention can have long term consequences, and that early identification can induce an improvement in the difficult behaviour and may prevent pathological development. In addition to the complexities associated with defining and identifying challenging behaviours there are similar difficulties in understanding what can be done to prevent challenging behaviours from developing in the first place; and once identified, what intervention is necessary to divert the challenging behaviours to more socially adaptive behavioural patterns (Powell & Dunlap et al2006).

One of the aims of the research described in the present thesis was to suggest a practical intervention programme to aid in improving the interpersonal interactions between adults and children in order to prevent the development of pathological behaviour. Despite the understanding of the implications of challenging behaviours by young children, problems in socialisation, school adjustment, school success and educational and vocational adjustment in adolescence and adulthood (Cambell, 1995; Dodge,1993; Kazdin,1985; Reid,1993), little is known about possible strategies that could be used to intervene and prevent these negative implications (Powell &Dunlap et al., 2006).

When children with significant problems are neither identified in a timely way nor given appropriate education and treatment, their problems tend to be long lasting,

requiring more intensive services and resources over time. Moreover, there is an increased likelihood that they will endure poor academic outcomes, peer rejection and adult mental health concerns, and that there will be adverse effects on their families, their service providers, and their communities. Although some systems and tools for early identification of children with challenging behaviours are available, the actual identification of these children and provision of appropriate services are very low.

Extensive research by Dunlap et al. (2006) has identified certain factors and intervention models that are significant in trying to prevent challenging behaviours: this data was attained through an extensive peer-reviewed programme evaluation data and longitudinal analyses of social outcome .and follow-up analyses of early childhood support programs. The researchers concluded that:

.1 Children and their families who access mental and physical care are less likely to have behavioural and social problems .

.2 Nurturing and positive parenting is associated with children who have healthy relationships and less challenging behaviour.

3. High quality early education environments and caregiver interactions are associated with fewer behaviour problems and the development of social competence.

Early intervention programs have been found to have effective positive results for the reduction and containment of challenging behaviour (Hemmeeter et al., 2006). Interventions based on a functional assessment of the relation between the challenging behaviours and the child's environments are effective for reducing challenging behaviours of young children.

.1Teaching procedures have been demonstrated to be effective in developing children's skills and reducing challenging behaviours.

.2Interventions involving alterations to features of the child's activities and the child's social and physical environment have been demonstrated to reduce challenging behaviours.

3.Multicomponent interventions implemented over time and across multiple relevant environments can produce durable, generalised increases in pro-social behaviour and reductions in challenging behaviours.

It may be difficult to target ADHD in an effective intervention programme because of the lack of consensus for the basic causes of the disorder. Thus there have been few attempts to systematically implement any program in relation to ADHD, especially in early childhood (Powell &Dunlap et al., 2006). Although there have been innovations in drug treatments based on improved understanding of existing treatments (Volkow & Swanson, 2003; Swanson 2003), non-pharmological approaches, adapted from generic models of intervention and 'borrowed' from other clinical domains (Sonuga-Barke et al., 2005) have rarely been developed with the goal of treating ADHD.

The idea of early intervention as a preventive measure in the case of ADHD is still in its infancy. Those early intervention programs that address the problem have adopted standard pharmacological and/or generic family based models (Jones et al., 2008). Intervention programs based on medication and behavioural intervention are not curative and do not result in significant improvements for all who are treated. In addition, the evidence collected until now, does not include data concerning long-term effects and does not generalize across settings (Miller & Hinshaw, 2012).

This research aimed to investigate the results of an ecological-psycho-pedagogical model of intervention as an alternative measure to help enhance children's self-regulation, which is seen as a central area of difficulty in young children with ADHD characteristics, thus improving the quality of interpersonal interactions between the young children and the significant adults in their lives, parents and teaching staff.

II. 6The Ecological Psycho-Pedagogical Model

This model was employed to examine the interactions between the young at-risk child, who exhibits ADHD symptoms, and the significant adults in their lives, parents and kindergarten teachers, as they were influenced by the implementation of a developmentally based intervention programme based on pedagogical measures and two different teaching strategies: scaffolding and mediated learning. The intervention program aimed to increase the child's ability to implement self-regulatory behaviour strategies, to facilitate their successful integration in everyday activities in the preschool and home. The model is based on three basic theories: the ecological theory

of Bronfenbrenner, Vygotsky's theory of scaffolding and Feurestein's theory of mediated learning.

II.7Bronfenbrenner's Ecological Theory

The Ecological Theory of Bronfenbrenner (1979) explains that young children's development is affected by their home environment and kindergarten environment. The education and physical treatment of these young children is consequently shared between the kindergarten staff and their parents. To enable a child to reach optimal development, both environments need to co-operate on a daily basis. The importance of Bronfenbrenner's Ecological Theory is in the fact that personal development is seen in relation to different kinds and levels of systems: the micro-system, the meso-system, exo-system and macro-system:

The micro-system: This is the level closest to the child and contains the structures with which the child has direct contact. The micro-system encompasses the relationshps and interactions that a child has with its immediate surroundings, such as immediate family or caregivers and their school or daycare (Berk, 2000).

The meso-system: This system includes the linkages and processes that take place between two or more settings containing the developing person, i.e. the relations between home and preschool, school and work place. A mesosystem is actually a system of microsystems.

The exo-system: This system encompasses the linkage and processes taking place between two or more settings, at least one of which does not ordinarily contain the developing person, but in which events occur that influence processes within the immediate setting that does contain that person, for example, the relation between the home and the parent's work place.

The macro-system: This system may be thought of as a societal schema for a particular culture, subculture, or other broader social context. The macrosystem consists of the patterns of the micro-, meso- and macro-systems that give a frame of reference to belief systems, patterns of social interchange, culture or subculture (Bronfenbrenner, 1979).

II.8Scaffolding as a pre-school teaching strategy

Vygotsky's concept of the Zone of Proximal Development (ZPD) and his use of ‘scaffolding’ as a teaching practice have been influential in modern pedagogic practices. Vygotsky defined the ZPD as: "the distance between what children can do by themselves and the next learning that they can be helped to achieve with competent assistance" (Raymond, 2000, p.176). The tool used to help children to traverse the ZPD is ‘scaffolding’. ‘Scaffolding’ is used to teach new skills to children, by engaging them in a collobarative manner in tasks that are too difficult for them to do on their own. The scaffolds or supports are provided by others to facilitate the learner's development. The scaffolding enables the child to build up their understanding of new concepts or processses, and when they are able to resume sole responsibility for completing the process or task, the scaffolding is removed.Vygotsky defined ‘scaffolding instruction’ as "the role of teachers and others in supporting the learner's development and providing support structures to enable [them] to get to the next stage or level" (Raymond, 2000, p.176). The learning occures in the ZPD .

The instructor aims to prepare the student to become an independent and self-regulating learner and problem solver (Hartman,2002). The newly aquired knowledge becomes permanent in the child's cognitive structures. Vygotsky's theory has made an important contribution to the concept that knowledge can be mediated through significant others in a child's life and that the level of knowledge that a child can gain does not depend solely on their natural abilities or immediate experiences. Vgotsky suggests that it is possible to extend and deepen one's knowledge through the support of knowledgeable others.

Observational research on early childhood learning, shows how parents and caregivers facilitate learning through scaffolding. The scaffolds provided motivate or enlist the child's interest and simplify the task to make it more manageable and achievable for the child (Bransford, Brown & Cocking, 2000). Social interaction allows the child to develop the ability for ‘inner speech’. The ability to engage in inner speech involves the child’s ability to use reflective dialogue to help them monitor cognitive actions (Ibid, 2000). When this is achieved, the child has entered the Zone of Actual Development (ZAD). For scaffolding to be effective, the adult has to ensure that they do not offer assistance for too long so that the child does not become dependent rather than independent. Learning objectives need to be included

in the ZPD so that the child will be challenged by tasks that are just above, but not too far above, their level. Vygotsky believed that knowledge is socially and cuturally constructed. What and how a child learns depends on the quality of interactions they have with their teacher\parent. The child is a collaborative participant, the teacher's role is to observe learners closely as individuals and groups.

II.9Mediated Learning In Early Childhood Settings

The theory of mediated learning suggests changes in the perception of educational processes and its practical applications (Pressein & Kozulin, 1992). The quality of interpersonal relationships between young children and the adults in their environment depends on the ability of the adults to take an active role in focusing the learning experiences to which they want to expose the children. The learning experiences have to be more specific and less random. To be an efficient mediator demands self-awareness and explicit training. there are 11 to 12 characteristics of MLE, but only the first three, intentionality and reciprocity, meaning and transcendence, are thought to be necessary and sufficient for an interaction to be classified as a mediated interaction.

The implications of the theory of Mediated Learning are that the significant adults in children’s lives, whether they are parents or educators, can serve as capable, efficient mediators. The concept seems to be simple; mediation does not necessitate special surroundings, expensive equipment or professional people to ‘train’ the children. The theory is based on the quality of interpersonal interactions.

There are two foci for interventional strategies:

Creating conditions for the enhancement of learning potential for all individuals, as part of the normal parent/child interaction, directed toward helping parents maximize the developmental interactions that are part of the typical and available life space they experience.

Addressing the child with special needs, for whom impairments of development caused by a wide variety of conditions require specially designed and implemented interventions to overcome barriers to development (Falik, n.d).

To realise the first goal, necessary behaviour patterns that will enhance cognitive modifiability should be specified and then to act on those specific behaviour or language patterns. To achieve the second goal, specific impediments should be identified, developing strategies to overcome them, and then using the strategies in a systematic manner and thereafter actively and consciously continuing to employ those strategies to create modifiability.

II.10Early Childhood Mental Health Consultation

Early childhood mental health consultation is "a systematic approach to building the capacity of an early childhood professional to promote young children's social-emotional and behavioural development" (Perry et al.2009, p.1). Consultation is based on the concept of building a collaborative relationship between the consultants, the early childhood professional i.e. the kindergarten teacher, and the parents; the emphasis being that all participants are equal in their positions and that each 'expert' in the constellation has important skills and knowledge to contribute to an overall perception and understanding of the child's developmental progress. It has been found to be an effective means for decreasing the likelihood that children with challenging behaviours will be expelled or suspended(Gilliam,W.S. Shahar,G. 2006). The aim of the consultation method is to build an individualized 'tailor made' intervention programme that will promote healthy development and prevent the development of problematic behaviours, and as such reduce the occurrences of challenging behaviours (Perry & et al.2008). The consultation takes place in the early childhood settings or homes, and focuses on intervention strategies that the significant adults can implement in their interactions with the child, as opposed to providing individual therapy to the child.

The consultant that works in the field of early childhood needs to have extended experience, formal qualifications and understanding of young children's development, understanding of family interactions and an understanding of the practical side of working in group settings with young children. They also need to have access to another qualified consultant to provide them with reflective supervision (Glikerson, 2004). The role of a consultant is different from a therapist. The consultant's target is to build up skills and the capacity of another. In the present research, the researcher acted as the consultant.

In a study that that examined the effectiveness of early childhood consultation, classes in which teachers lacked access to consultation showed higher rates of expulsion among children. In areas where consultation was available, there was an increased feeling of efficacy and confidence among the teaching staff in dealing with challenging behaviours; and several members of staff described less job–related stress and higher levels of sensitivity towards the children with challenging behaviours (Brennan, Bradley, Allen & Perry, 2008).

In this research the consultation program aimed at increasing self-regulatory behaviour and decreasing challenging behaviours to ensure an improvement in interpersonal relationships. The main foci of the program were:

Individual & Child Focus:

•Focus on increasing children's self-regulatory behaviours while supporting the staff and parents' needs.

•Focus on the theories of MLE and Scaffolding as theories of cognitive change.

Program Focus:

•Focus on the adaption of the curriculum to integrate practices that can be suitably adapted to children with challenging behaviours.

•Proposes that consultation influences the climate of childhood settings by increasing the staff's capacity to promote positive interactions within the childhood settings, during the daily schedule.

•Addressing and alleviating early childhood staff's stress.

III Methodology:

III.1 Action Research:

Action research is a method for improving practice, involves action. Evaluation and critical reflection and based on the evidence gathered –changes in practice are then implemented. It is participative and collobarative; and is undertaken by individuals with a common purpose.

III.2Research Paradigm:

The most suitable research design for this research is the mixed methods design, which entails the integration of quantitative and qualitative results.

III.3Research Goal and Aims

The long-term goal of the study was to develop an understanding of the phenomenon of young children exhibiting ADHD behaviours and the delicate interpersonal interactions between these children and the significant adults in their lives, namely kindergarten teachers and their parents.

The following aims were derived from this goal:

- To build a profile of preschool children who exhibit traits of ADHD.
- To build a working intervention model of intersystem collaboration to help increase self-regulatory behaviour in young children.
- To provide parents and kindergarten teachers with efficient interaction skills, suited to children exhibiting ADHD behaviours in order to improve interpersonal interactions between the parents and kindergarten teachers and young pre-school children.

III.4Research Questions:

- Is it possible to identify ADHD from early childhood?
- How does the expression of ADHD traits affect interpersonal relationships between young children, their parents and kindergarten teachers?
- Is it possible through educational and consultation methods, to moderate the expression of ADHD traits?

III.5Research Hypotheses :

The following hypothesis was tested by the research:

An intervention program based on mediated learning and scaffolding, implemented through consultation methods, where kindergarten teachers and parents work together in a collaborative effort, can improve self-regulatory behaviour in children exhibiting

ADHD characteristics, thus increasing the quality of interpersonal relationships between the children, parents and teachers .

The Independent Variable: The Intervention Programme .

The Dependent Variables: self-regulatory behaviour: interpersonal relationships.

In this research, the choice of an appropriate research design, was based on the requirements of the research questions, the need for triangulation, the need to enhance, elaborate and illustrate the results of the quantitative data and the wish to improve understanding of interpersonal relationships affecting children, parents and kindergarten teachers alike. The research paradigm apparently most suitable for this research was the pragmatic paradigm, known as mixed methods research.

Mixed methods research adopts a research strategy employing more than one type of research method. This may be a mix of qualitative and quantitative methods, a mix of quantitative methods or a mix of qualitative methods. Bryman (2001) indicated that in mixed methods research one type of technique will be prominent, but that all research is enriched by the addition of other techniques (Bryman, 2001).

In this research the ultimate goal of the research enquiry, as noted, was the wish to enhance understanding of the selected group of children within the system in order to produce practical principles and strategies for the improvement of the pedagogical practices. The population of participants, kindergarten teachers and parents were engaged in a collabatory design, to benefit all those involved. Therefore action research was a suitable model for this research design.

III.6 Research Tools

The following tools were used to collect quantitative data at the first stage of the study:

The Child Behavior Checklist (CBCL)

This is a parent-report questionnaire on which the child is rated for various behavioral and emotional problems. First developed by Achenbach (2000), it consists of 100 items that address a young child's behaviour, and was translated into Hebrew .

The Achenbach Child Behaviour Checklist for Kindergarten Teachers (C-TRF)

The list for children aged 1.5-5 years old addresses children's behaviour associated with ADHD behaviors, as defined in the DSMIV, relating to behaviour patterns such as Inattention, Impulsivity, Hyperactivity and Self-regulation. The check list which consists of 100 statements that address a young child's behaviour, was translated into Hebrew. In the first stage only the kindergarten teachers were required to fill in the questionnaires. After the researcher selected three candidates for the next stage of the research, then their parents were requested to answer a similar check list, adapted for parents and translated into Hebrew.

After the conclusion of five separate observations, of each child, at various different times of the day the researcher conducted a consultation with the kindergarten teacher on the implementation of the intervention model in the kindergarten,which took place in the child center's director's office. In a subsequent meeting the researcher conducted a consultation with the parents on the implementation of the intervention program within their home surroundings.

Two main tools were used to collect the qualitative data at the second stage of the research: unstructed observations and post and pre- intervention open ended interviews with both the kindergarten teachers and parents that participated in the program. The program was evaluated by a closed evaluation report completed by both kindergarten teachers and parents that participated in the program and by content analysis from the open ended interviews post – intervention.

The program was was developed on the basis of the Developmental Appropriate Practice (D.A.P.) program (NAEYC, 2009).

The model of intervention involved five stages:

.1 Identifying and defining a concern,

.2 Establishing mutual goals between the kindergarten teachers and the parents that participated in the program .

.3 Co-constructing a pedagogical plan, between the parents and the kindergarten teacher based on scaffolding and mediated learning, that can be implemented at home and in preschool

.4 Implementation of the plan across the two settings; in the home and within the kindergarten .

5. Collecting data to determine goal achievements.

III.7The research population:

The research population for the qualitative stage of the research was selected from kindergartens in kibbutzim in the North of Israel and included 30 children exhibiting low self-regulatory behaviours , 24 kindergarten teachers and 6 parents. The kibbutzim and kindergarten teachers were selected according to their level of willingness to take part in the research program and due to the agreement of the child center directors. From the analysis of the quantitative data the researcher selected three children, who constituted the sample population for the second stage of the research, the collection of qualitative data. The choice of participants for the second stage of the research was based on the extent to which the participants were typical or differed from the research population, i.e. to what extent could they represent the group under study. Following this criterion for selection, the researcher chose participants that were typical to the group of interest, in this case, children who showed high levels of impulsive, hyperactive, inattentive behaviour.

The psycho-pedagogical intervention program following the D.A.P. model was carried out by kindergarten teachers in the kindergartens.The researcher initially met the teachers for an introductory session where she provided information from the Child Behaviour Checklist (CBCL) concerning the nature and incidence of ADHD and its effects on learning and social behaviour, with specific emphasis on self-regulating behaviour. The researcher and kindergarten teacher then met with the parents, who also received the same information. The kindergarten teachers and selected child were observed by the researcher during a twenty minute period in their natural surroundings, in the kindergarten . After the conclusion of five separate observations, of each child, at various different times of the day the researcher conducted a 45 minute consultation with the kindergarten teacher on the implementation of the intervention model in the kindergarten in the child center director's office. The kindergarten teacher received guidelines on pedagogical management skills suitable for young children exhibiting ADHD traits. In a sequential

meeting the researcher conducted a consultation with the parents on the implementation of the intervention program within their home surroundings.

The data that was collected was analyzed through content analysis and quantitative measures.

IV.Findings:

The findings of the research were consistent with previous research(Egger et al., 2006) that ADHD can be identified in early childhood and is characterized by similar behaviours to those that appear in the DSMIV(2000), Hyperactivity, Impulsivity and Attention Problems. The key findings from the Achenbach questionnaire revealed that it is possible to identify ADHD from early childhood; the children in the research were between the ages of 2-5 years of age. The findings showed that 15: 50% , of the children from the sample population exhibited ADHD behaviours similar to the DSMIV scales. Through the content analysis it was also possible to identify that these children exhibit behavioral patterns of hyperactivity, impulsivity and Attention problems, which are similar to the DSMIV(2000) categories in identifying ADHD. These behaviours were also viewed during natural observations. The findings that emerged from the content analysis, revealed that these behavioral patterns affect the quality of interpersonal relationships between the child their parents and the kindergarten staff. The Intervention program based on Mediated Learning and Scaffolding teaching strategies, which were central to the consultation processes, helped the children improve their self-regulatory skills, which positively affected the quality of the interpersonal relationships. These findings were revealed in the evaluation report and through the content analysis done on the open ended interviews at the end of the program.

The distribution between the sample population of 50% above the normative range and 50% below, can explain the total mean T-scores which did not show significant mean T-scores above the cutoff point in both scales. The 50% of the population that did not show ADHD characteristics ,but according to the kindergarten teachers showed difficulties in self-regulatory behaviours indicate that it is necessary to examine the child's behaviour more specifically before assuming that lack of self-regulatory behaviours are necessarily equivalent to ADHD.

From the sample population of 30 children ,15 boys and 6 girls were in the clinical range for total externalizing problems, 3 boys in the marginal range, 24 children all together, which was found in the literature to have a correlation with ADHD (Hudziak,J.J. ,Copeland,W. Stranger,C. and Wadsworth M. 2004). Therefor a combined evaluation of a lack in self-regulatory behaviours and total externalizing problems could be a more accurate way to identify ADHD.

The quantitative findings were extended through the qualitative findings : The three aspects of ADHD that are defined in the DSMIV(2000) as being central to the identification of ADHD, are impulsivity, hyperactivity and attention problems , through the Achenbach questionnaire the level of attention problems and Attention Deficit Hyperactive Problems were identified in the ranges from normal to clinical. The percentage of children that were found to be within the marginal to clinical ranged for attention problems was 39.1% in the boys population and 42.9 % in the girl population , which is different to the literature that indicates a higher level of attention problems in boys than girls(Barkley,1977).

Attention Deficit /Hyperactivity Problems were found to be in 56.5% of the boy population and 28.6 % in the girl population, a ratio of 1:2 , which is not compatible to the literature which indicates a ratio of 1: 3 boys to girls. This could be explained by the small population example , 7 girls , 23 boys , therefor interpretation of the percents should be taken with caution.

From the content analysis of the qualitative findings from the interviews with the parents and kindergarten teachers and during the natural observations these behaviours were also identified, which reinforced the quantitative findings.

Through the quantitative and qualitative data of the sample population it is possible to state that ADHD traits are visible from an early age. Ages 2-5 years in this case. The behaviours that were exhibited : impulsivity, hyperactivity and attention problems appeared both in the girl population and the boy population. This was verified through the quantitative tools: Some of the scores that the children from the sample population that participated in the intervention program ,received on the Achenbach Childhood Behaviour List, were in the clinical range.

From the evaluation report and the open ended interviews it was possible to discern the improvement in the children's behaviour that was experienced by the kindergarten .teachers and the parents and as a result an improvement in interpersonal relationships

Child 1 : There were improvements in the ability to be considerate to others, in the ability to sit still, to be able to regulate angry moods, increased social abilities, more friendly and less argumentative, less distracted , greater ability in being able to stop and think before acting and better concentration levels .

Child 2 : There were improvements in the ability to sit still ,in the ability to regulate angry moods, increased social abilities, less easily distracted, less argumentative, better able to stop and think before acting, less fearful and better concentration levels

Child 3: There were improvements in the ability to be considerate of others, in the ability to sit still, in the ability to regulate angry moods , increased social abilities, less easily distracted, better able to stop and think before acting , better concentration levels.

VI Conclusion

This research aimed to identify ADHD in early childhood , ages 2-5 years of age through developmentally appropriate tools and open ended interviews . From the findings it was revealed that ADHD is present in early childhood .ADHD in early childhood is seen to be viewed as comprising three primary characteristics: poor sustained attention, impulsiveness and hyperactivity which is similar to ADHD in older children (American Psychiatric Association,1980; Barkley,1981). In all three cases that were examined in this research there was seen to be an improvement in attention abilities, hyperactivity and impulsivity. The children exhibiting ADHD characteristics have great difficulties in interpersonal relationships and are perceived in a negative light by their caretakers. This research implemented an intervention program which aimed through pedagogical measures to increase the children's self-regulatory behaviours and as a result improve the quality of the interpersonal relationships. According to the findings the intervention program was successful in increasing certain aspects of children's self –regulatory behaviours in the home and kindergarten settings. The intervention program was based on collaborative

behaviours between the home and kindergarten which increased the level of communication between the parents and kindergarten teachers .

Therefor it is possible to state that when there is an organized systematic intervention program based on pedagogical strategies that are implemented both in the home setting and the kindergarten setting it is possible to modify problematic behaviours of ADHD , and by thus improve the interpersonal relationships between the kindergarten teachers and the children. In this research the effect on the parents was less apparent, perhaps because the emotional processes are more complicated between parents and children. This would be an important area for future research as would be a longitudinal research project to follow through and see if the changes are long standing. The research showed that in mainstream kindergartens there were a large number of children with challenging behaviours, above normative levels. The Kindergarten teachers expressed difficulties in their ability in being able to be contain these behaviours. In Israel there is a law of integration of children with special needs being integrated into mainstream educational systems(1980). This has implications for kindergarten teachers training. It is necessary that kindergarten teachers receive appropriate skills for working with the families and their children who exhibit difficult behaviours .

This research in addition indicates that an intervention program based on the psycho-pedagogical ecological philosophy can help parents and kindergarten teachers in their daily interactions with children with difficult behaviours . The implication for this is the constant availability of professional counseling services to enable the parents and kindergarten teachers to examine and adjust their practices in their daily interactions with these children.

VII Contribution of this research

This research can contribute to existing knowledge concerning the identification of ADHD in early childhood, indicating the tools that may be effective for this identification process.

The findings affirm that early identification of ADHD traits in young children, early referral and suitable intervention enable teachers and parents to increase a young child's self-regulatory behaviours. Such intervention can prevent an escalation in

challenging behaviours, which adversely affect the quality of interpersonal interactions between young children and the significant adults in their lives .

This research has implications for teacher training programs, that it is essential that kindergarten teacher's training curriculum should include skills and knowledge concerning the identification, the ability to build intervention programs and evaluation of children with special needs, in all the educational settings. The curriculum should also include the training for future kindergarten teachers concerning the abilities to counsel and assist parents in their complex interactions with their children that exhibit special needs . These are not only skills relevant to teachers in special education.

Further implications concern the Ministry of Education to provide constant professional counselling to kindergarten teachers in the field as part of their on -going professional development.

This research also indicates a great need for a support system for parents of children with ADHD, especially from an early age , due to the importance of the quality of interpersonal relationships from an early age as an indication for future psychological health.

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